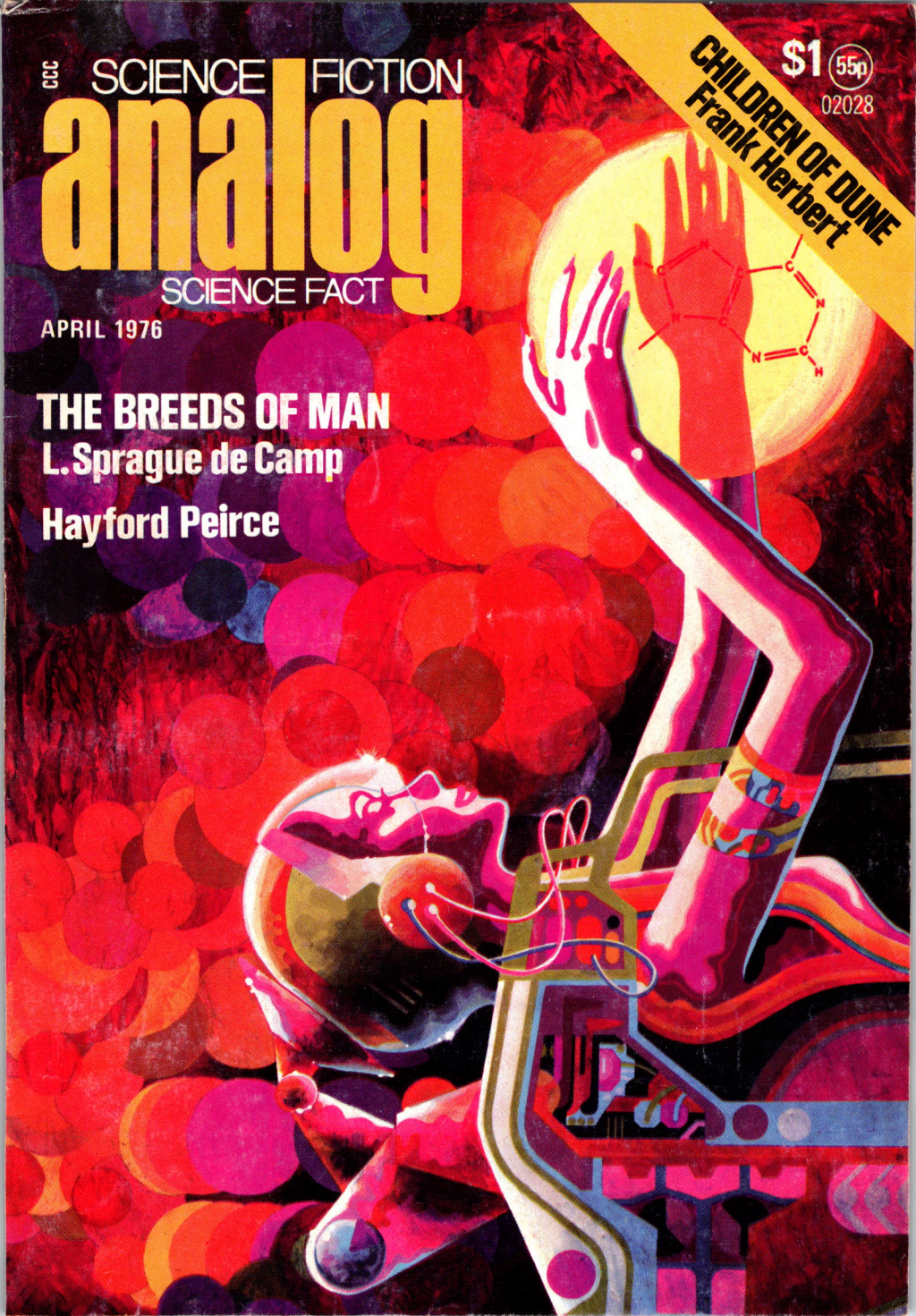
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A Calendar of Upcoming Events

April 8-10, 1976:
Epistemological Relationships Between the Sciences and the Humanities (Miami University) at Oxford, Ohio. Info: B. Harwood, English Department, Upham Hall, Miami University, Oxford, Ohio 45056.

April 16-18, 1976:
EQUICON/FILMCON 76 (Star Trek and Fantasy Conference) at the Marriott Hotel, Los Angeles, California. The Melies and Robbie Awards will be presented. Registration: Attending $10 until 10 April 1976, $15 thereafter; nonattending $6. Info: Post Office Box 23127, Los Angeles, California 90023.

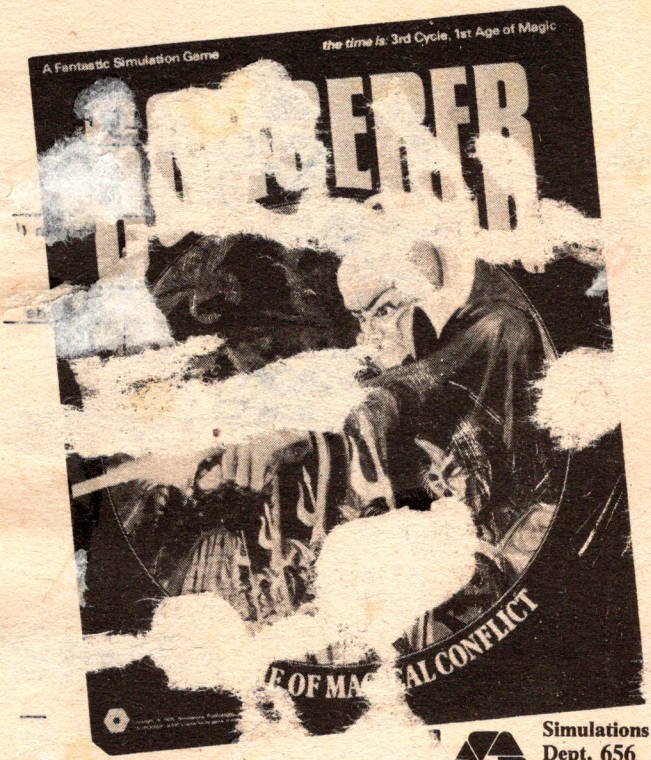
BALTICON 10 (Baltimore area SF Conference) at Hunt Valley Inn. Guest of Honor: Isaac Asimov; Fan Guests of Honor: Suzanne Tompkins and Jerry Kaufman. Registration: $4 until 26 March, $6 thereafter. Info: Norman Schwarz, Box 328, Glen Burnie, Maryland 21061.

April 16-19, 1976:
MANCON 5 (27th British SF Convention) at Owens Park, Manchester. Guest of Honor: Robert Silverberg; Fan Guest of Honor: Peter Roberts. Registration £2.50 ($6) attending; 75p ($2) nonattending. Info: Brian Robinson, 9 Linwood Grove, Longsight, Manchester M12 4QH, England. North American agent: Bill Burns, 48 Lou Avenue, Kings Park, New York 11754.

September 2-6, 1976:
MIDAMERICON (34th World Science Fiction Convention) at Hotel Muehlbach, Kansas City, Missouri. Guest of Honor: Robert A. Heinlein; Fan Guest of Honor: George Barr; Toastmaster: Bob Tucker. Panels, talks, masquerade, films; presentation of the Hugos and the John W. Campbell Award for Best New Writer. Registration: $20 attending (until 1 May); $6 nonattending. The committee is handling all room reservations so don't write to the hotel directly. Info: Post Office Box 221, Kansas City, Missouri 64141.

—ANTHONY R. LEWIS

By



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editorial

The Conspiracy Theory

The revelations coming out of Washington (and other world capitals) are enough to make one believe that there's a massive, well-planned, highly successful conspiracy afoot, with the goal of reducing the United States of America to despotism.

Watergate was the tip of the iceberg. As the Congress and the press probe deeper, we find that the worst accusations of the so-called radical leftists of the Sixties didn't go far enough. The Army and the FBI have been spying on ordinary American citizens. The Post Office has allowed various Government agencies to open private citizens' mail. The CIA has been trying assiduously to assassinate certain foreign leaders, and even hiring the Mafia to help with the job—mostly without success. A President of the United States condoned the overthrow of the duly-elected Government of Chile. On and on, the dismal list gets blacker and blacker.

Typical of the current style and attitude in Washington is the case of Mrs. Betty Ford. The First Lady caused a mild stir when she spoke frankly about her concept of modern sexual morality. Now that President Ford is running hard for re-election, his wife has promised not to say anything "controversial" until after the voting in November. In other words, a man who has sworn to "preserve, protect and defend the Constitution of the United States" has withdrawn the First Amendment guarantee of free speech from his own wife. So much for the modern understanding of what this nation is all about.

Is there a conspiracy to destroy the US? And if so, who's behind it?

Look beyond the headlines. Examine some of the underlying facts of the matter. In particular, since we are all interested in the impact of science on human life, we should carefully study how science and technology have affected the American political scene.

In 1948, an incumbent American President campaigned across the nation for re-election. Like Gerald Ford, Harry Truman had not been elected to the Presidency; he gained the White House only because Franklin D. Roosevelt died. Truman campaigned mainly from the rear platform of a special train, on a "whistle-stop" tour that criss-crossed the country. Feisty old Harry spoke directly to the people—sometimes as few as a dozen of them, or fewer.

(Time out for an unabashed plug for a movie. Do see *Give 'Em Hell, Harry*, starring James Whitmore in a one-man impersonation of Truman. Whatever your politics, it will be refreshing to see how Truman did things nearly thirty years ago. And fun!)

Thanks to the advance of technology, when a national candidate wants to speak to the people, he uses a jet airplane and television. Instead of "whistle-stopping" from one hamlet to another, he flies to a major city, spends a few hours giving a speech and shaking hands (flanked at all times by a phalanx of Secret Service guards, publicity men, speech-writers, hairdressers, poll-takers, et cetera), and then whisks off to the next city at nearly the speed of sound.

Today's candidates speak to television audiences, not to people. Their speeches are given in large auditoriums and banquet halls, but even there they speak for the television audience—the millions who can't afford a hundred dollars a plate for rubber chicken, but who watch The Tube faithfully. Only the very dark horse candidates without much financial backing stand on street corners and try to buttonhole individual voters.

The impact of modern communications technology, then, has been to put more distance between the candidate and the voter. It's a strange paradox; the more voters the candidate can speak to, the farther away from the voters he becomes.

Moreover, since the *big* audience is the television vote, candidates pay much more attention to their looks and TV "image." One of the major candidates for the Presidency this year is a reformed movie actor. Cosmetics have become as important as foreign policy positions, and the incumbent President has as many jokewriters on his staff as Jack Benny did on his long-running radio and television show. Benny was funnier, of course, but the gap is much narrower than one would expect.

Two other aspects of modern technology have greatly affected contemporary politics, especially at the Presidential level.

One of them is modern firearms technology. High-powered rifles and easily-obtained pistols have forced candidates to protect themselves from the public. Politicians still feel obliged to rush out into the crowd and "press the flesh." But if a couple more candidates are shot at—successfully or not—we will see the end of all the handshaking. Candidates will be toted around in bulletproof bubbles and speak to the public only through protective shields. The President could become as remote a figure as the typical science fiction alien visitor from another world.

The other important technological impact on politics has been the computer.

NOTES TO A SCIENCE FICTION WRITER

BEN BOVA

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When Harry Truman whistle-stopped past Thomas E. Dewey, Henry Wallace, Strom Thurmond and all the pollsters to his election triumph in 1948, his speeches were clear and distinct. In essence, he said, "Here's where I stand. Here's what I want to do. Here's where the 'sumbitches' who oppose me have prevented me from doing what I want to do. If you agree with me, vote for me. If you don't, vote for the other side."

Legend has it that when one yokel yelled up from a train platform crowd, "Give 'em hell, Harry!" his response was a big grin and, "Give me time."

Today's politicians don't come out that forthrightly, to say the least. If you ask them what they ate for breakfast, they'll hedge as long as they can, and then answer, "A fine, nutritionally balanced typical American breakfast." See, they're afraid that if they say they had orange juice, they'll be asked if it was Florida oranges or California oranges, and no matter which way they answer, they'll lose votes in the un-named state. As well as losing votes among the grapefruit-growers, the mango-lovers of Hawaii, and the diligent cranberry people of Massachusetts.

In a perverse way, Truman's stunning upset victory of 1948 put the seal of doom on forthright political pronouncements. The pollsters guessed so badly (they predicted a landslide Dewey victory) that they all went back to their drawing boards to find out how they could be so wrong. They improved their techniques magnificently, and went into computer analyses of data in a big way.

The result was voter polls that have been damned accurate. But these polls, which are now taken weekly on every issue from banning the bomb to burning the bra, provide an overwhelming temptation for politicians.

The primary goal of a politician is to get elected; or re-elected, if he's already in. (And please don't feel slighted, women; "he" includes "she" in this Editorial. To date, female politicians have shown no discernible improvement over the males.)

To get elected, you must win more votes than your opponent. Which means, to the political mind, that you must not alienate as many votes as your opponent does. So politicians follow those polls faithfully. And when a national poll shows that, on the issue of giving nuclear technology to Egypt the American voters are divided 48 percent in favor, 40 percent against, and 12 percent either no opinion or don't know, the typical politician—when asked how he feels about the issue—will say that he's 48 percent in favor, 40 percent against, and 12 percent undecided. He'll try to camouflage his answer to make it seem more decisive, but his response will be aimed at alienating

as few of the voters as possible.

So the impact of computerized polling techniques, added to the effects of television and jet travel, have combined to produce a generation of politicians who have lost the ability to say, "Here's where I stand; either vote for me or for the other guy." Every politician wants to get *all* the votes, and as a result every statement the politician makes is a blur of generalities.

What kind of person can go through life obscuring his own feelings, hiding nerve-churning issues behind bland public-relations slogans, and avoiding an honest attempt to solve the problems of the day? What kind of person becomes a professional politician?

Without going into a deep psychological profile of the "typical" national politician, let's simply review what we have already discussed. Today's politician is a television "image," a meeter-and-greeter, a man who follows public opinion polls rather than one who leads public opinion. In short, the modern politician is a performer. An actor. A public personality who depends on advisers to tell him what he should be saying, and when, and to whom.

Leaders—in the sense of Truman, Roosevelt (both of them), Lincoln, Jackson—we no longer have among us. At least, that kind of person no longer goes into politics.

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alities in many industries. Even in rock music, there are the hard-driving, "here's what I want to do and if you don't like it just try and stop me" types. Big business has its share of movers and shakers. Small business has even more men and women who have their own visions of the world and their place in it.

But in modern politics, particularly at the national level, we have images rather than leaders. Pretty faces project fatherly (or motherly) concern for the voter. Androids are among us.

It's been said, "Those who can, do. Those who can't, teach." In today's political arena, those who can build their own success out of their own work and drive seldom go into politics. Those who do go into politics are those who need public adulation *and are willing to make the compromises of principle and personality* that are necessary to win that adulation.

Certainly there is conspiracy cooking inside American politics. Using modern communications and information technology, this conspiracy has managed to produce politicians who do not lead, men and women who will blow with any political wind, a-principled political animals whose only goal is to gain and keep office—so that they may gain and keep the public worship which they seek.

For this is the real political "payoff" of our generation: public homage. Men and women who have little or no feeling of self-worth *need* those big crowds cheering for them. This is the character type that goes into politics today; not the problem-solvers, but the glamor-seekers; not the natural leaders, but the weak-willed, manipulable, "personalities"; not the high-achievers, but the over-compensators.

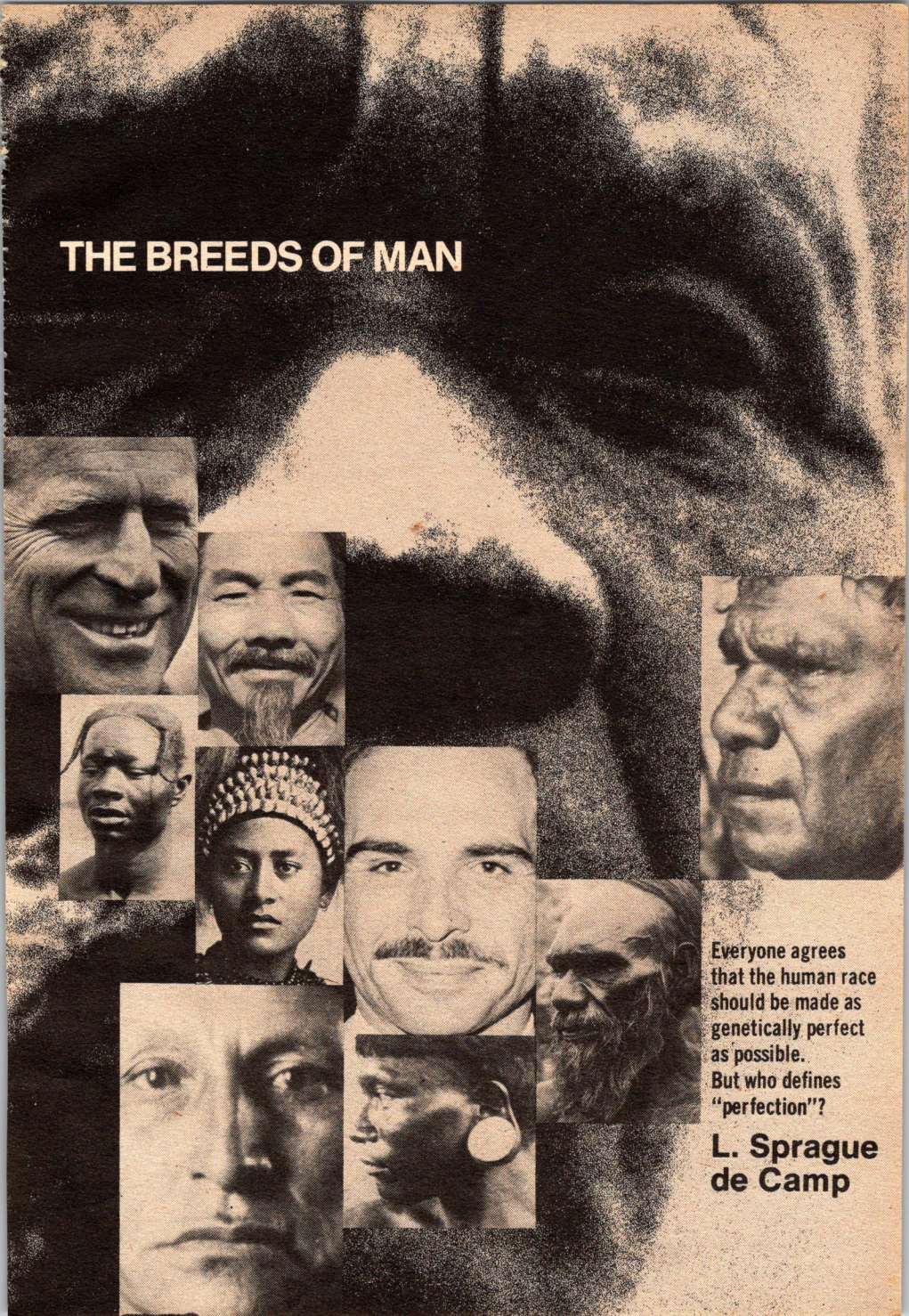
And who is responsible for this conspiracy? Who is masterminding it? We are. The voters. The flabby-minded people who complain about taxes and corruption and crime and morality . . . and do nothing else about it except complain. The voters who wake up on election day convinced that it makes no difference which candidate they picked, because both candidates are thieves or idiots.

The American political system depends on the active participation of the voter, not merely on election day, but throughout the political process that picks the candidates. Political nature abhors a power vacuum. By abdicating our responsibility as citizens, we have allowed the private pressure groups to select *their* candidates and foist them on us. We get crowd-pleasing, television "images" instead of political leaders. The nation's problems go unsolved and get worse.

And the Laws of Thermodynamics continue their universal lesson, unheeded: You can only get what you pay for.

THE EDITOR

THE BREEDS OF MAN



Everyone agrees that the human race should be made as genetically perfect as possible. But who defines "perfection"?

L. Sprague de Camp

It is a trusty rule of human conduct that, the less a man knows about a controversial subject, the more emotional, dogmatic, and violent he becomes when it is brought up. In this century, few subjects have aroused more intense dispute than the races of man.

Into the question of race, men have poured the emotions that they used to devote to religious controversy. Whereas they used to burn each other over such questions as whether God the Father was made of the same substance as God the Son, more recently they have abused, robbed, exiled, or killed one another by the millions over the question of who belonged to which race.

Let us look at the question, as free from emotion as it is given fallible mortals to be. What is a race?

The Earth now harbors about four billion human beings. Since all of these, save when prevented by distance, law, or custom, freely interbreed, by definition they belong to one and the same species.

Still, not all men look alike, nor are the differences among them scattered at random. People of any large area, such as Europe or India, while differing among themselves, also differ as a group from men of other lands. In this way, men are like other animals, among whom occur local groups differing from the rest. Such groups are called races, subspecies, or varieties. While "race" is generally used for men, "subspecies" for wild-life forms, and "variety" for domesticated organisms, they mean the same thing. Breeds of domestic animals are artificial races. Although the differences among human races look large to human beings, they are no greater than those found among many species of wild animals and much less than those among breeds of domestic animals—for example, between a St. Bernard and a Chihuahua.

Since the word "race" is much abused, we should know whereof we speak. We have all heard of "the French race," or "the Jewish race," or "the Aryan race." Scientifically, these terms mean nothing. "French" properly refers to a nationality, "Jewish" to a religion, and "Aryan" to a language. One becomes French by taking out French citizenship, Jewish by joining that religion, and Aryan by learning an Aryan language like English, Russian, or Hindi. Biologically, race is what one cannot change, such as one's physical form.

Because "race" is so much abused, the subject has come into ill repute. "Race" has become a dirty word, which one uses at the risk of being denounced as a crypto-Nazi. Many books about race are really polemics against Hitler.

Some try to prove that there is no such thing as race—or, if there is, there ought not to be, and races

should therefore be ignored. They hope that, by repeating "Race is a myth!" often enough, they can make it so, like Lewis Carroll's Bellman with his "What I tell you three times is true!"

As Smollett said over two centuries ago, however, facts are stubborn things. They will not go away because somebody dislikes them or deems them unfair or undemocratic. *If* racial differences exist, saying "Race is a myth!" will no more exorcize them than any other incantation.

In the Eighteenth Century, Linnaeus divided mankind into *Homo europaeus albus, H. americanus rubescens, H. asiaticus fuscus,* and *H. africanus niger*—or, in English, white European man, red American man, dark Asiatic man, and black African man. Subsequently, J. F. Blumenbach classified men as Caucasian, Mongolian, Ethiopian, American, and Malayan. He chose "Caucasian" for the white race because he thought the people of the Caucasus Mountains the handsomest whites and because he had a theory that mankind originated in the Caucasus. Now we speak more of the "Caucasoid" and "Mongoloid" races to distinguish their members from people who really live in Mongolia and the Caucasus. Blumenbach's "Ethiopian" race is usually called the "Negroid."

Through the Nineteenth Century, many tried their hands at racial classification. The number of races they recognized ranged from Virey's two, the black and the white, to Haeckel's thirty-four. Most earlier classifications were made by merely looking at people, which gave undue weight to skin color.

Then accurate measurements of hair, skulls, and other parts came into use. As each measurement was devised, enthusiasts tended to rely on it alone. When it was found that skull form meant something, Sergi divided mankind into a broad-headed and a long-headed race, with the curious result of lumping Swedes with Eskimos and Congolese.

Around 1900, Karl Landsteiner classified human blood into A, B, AB, and O. Soon the proportions of different blood types in populations were applied to the problem of race. The results often contradicted classifications based upon other traits. For instance, if we classify Europeans by skull form, they fall into three east-west bands: northern long-heads, central broad-heads, and southern long-heads. On the other hand, if we classify them by blood, they vary from the West, with a high frequency of type A, to the East, with a high percentage of type B.

Nonetheless, the distribution of blood types tells us something about racial history. American Indians, for instance, are distinguished by a very high percentage of type O, higher than that found

among their relatives, the Asiatic Mongoloids. This implies that their ancestors came to the New World long ago. Likewise, the blood types of the Caucasoids of India show these people to have been long separated from those of Europe and the Near East.[1]

Classifying the races of man is like trying to describe the clouds in the sky. No matter how few or how many divisions we recognize, there are all sorts of mixed and intermediate forms, which defy our efforts to fit them into neat compartments. Still, we can bring some order out of this chaos.

Let us, in fancy, go to Sweden. The first man we meet is Erik, a tall, slender, long-legged fellow with a pale pinkish skin, wavy blond hair, blue eyes, sharp, bony features, and a narrow, prominent, beaklike nose. In cross-section under the microscope, the hairs of his head are elliptical. If he has not lately shaved, he has a thick beard. On the other hand, there is a good chance that his hair will lose its color in middle age, or that he will go bald, or both.

Then let us go southward. As we go, we find that people's skins become darker and their hair curlier. In the Congo, on the equator, we meet Juma. He is a man of medium size and powerful build, with a skin of so dark a brown that it looks black. His hair is black and so curly that it stands out in a kinky mass. Under a microscope, the hairs are flat and ribbonlike. Juma's eyes are dark brown, and his soft, rounded features include thick, full, protruding lips and a pug nose with wide, flaring nostrils. He has little hair on his face but is likely to keep that on his scalp into old age.

Suppose, instead of going south, we journey eastward from Sweden. Nearly halfway around the world, in Japan, we meet Sojo. He is a short-limbed, stocky man whose skin is a yellowish tan, darker than Erik's but much lighter than Juma's. His hair is black and straight, with thick, coarse individual hairs, circular in cross-section. His eyes are dark brown, and a fold of skin over the inner corners of his eyes—a kind of extra upper eyelid, the "epicanthic fold"—gives him a slant-eyed look. His features are flat, with a padding of fat around the eyes and nose. Like Juma, he has little beard but is less likely than Erik to go bald or gray. As an infant, he had a purplish spot on the skin at the base of his spine, but this faded as he grew up.

There are other differences besides the visible ones. For instance, Erik would notice Juma's body odor, while Sojo would find both of them rather odorous. The odor is caused by an aromatic substance secreted by certain glands under the armpits. Juma has many of these glands, Erik a smaller number, and Sojo none at all.

Nobody would take these men for brothers. Moreover, if we chose at random a hundred Swedes, a hundred Congolese, and a hundred Japanese and mixed them, we could easily sort them out again, even if all were dressed exactly alike.

True, each group would vary within itself. But, whereas some Swedes are short and dark, some Congolese have sharp features, and some Japanese have heavy beards, such folk are minorities in their own lands. The differences outweigh the resemblances.

So we can safely say that Erik, Juma, and Sojo belong to different races. Following Baron Cuvier's classification of the early Nineteenth Century, we call these races the white or Caucasoid, the black or Negroid, and the yellow or Mongoloid. The color terms are only approximate. Caucasoids are not truly white but range from Erik's yellowish-pink to, in India, a brown almost as dark as Juma's.

(Unless otherwise indicated, I use "India" here in the geographical, not the political sense, including India, Pakistan, and Bangla Desh. When I say "Indian," I mean an East Indian—an *Indian* Indian. For American Indians I shall use the anthropological term "Amerind" to save the trouble of each time explaining which kind of Indian I mean.)

Negroids occupy most of Africa south of the Sahara. Caucasoids inhabit Europe, North Africa, and southern and southwestern Asia. Mongoloids dwell in central, northern, and eastern Asia and on islands east and southeast of that continent. Before Columbus, the Mongoloids also had the Americas to themselves.

Nowhere are the boundaries among the major races clear and sharp. As we travel south from Sweden, people look less like Erik and more like Juma; but there is noplace where we can say: here is the Caucasoid-Negroid boundary. Neither, as we go east from Sweden, do we find any sharp boundary sundering Caucasoids from Mongoloids.

True, the Sahara Desert provides a boundary of sorts between Caucasoid and Negroid. Likewise, the deserts of Turkestan, the Tien Shan and Himalaya Mountains, and the jungles of Assam form something of a barrier between Caucasoid and Mongoloid. Although men intermediate between Caucasoid and Negroid (like the Nubians) and between Caucasoid and Mongoloid (like the Turkomans) live in these places, these intermediates are relatively few. The great majority of mankind—perhaps 99 percent—fall clearly into one or another of these three major races.

Allowing for the lack of accurate figures from many lands, we can estimate that, of the Earth's three billion-plus people, the Caucasoids comprise 55 percent to 60 percent;

Mongoloids, 30 percent to 35 percent; Negroids, 9 percent to 10 percent. The Caucasoids, however, include not only the pale European Caucasoids but also the dark Caucasoids of North Africa and Asia. About half the Caucasoids belong to the light group and half to the dark, although there is again no sharp boundary. Algerians and other North Africans are but little darker than southern Europeans; but, as we go eastward, skins darken until they reach the coffee hues of India.

Outside the three main races are several smaller groups, totaling less than one percent of the world's population, which do not fit into any major race. In South Africa, for instance, live the Bushmen and the Hottentots. These are small, yellow-brown folk with triangular faces, childish features, and hair that grows in little bunches. When well-fed, they store fat in their buttocks, which swell to grotesque size. They are the survivors of a once large and widespread group of theratic (that is, hunting-fishing-gathering) peoples, the "Capoid" race.[2]

Another remnant is the Australoid race of Australia and nearby islands, with brown-to-black skins. In some ways they resemble the Neanderthal race of the Old Stone Age. Their noses are often broad and flat, with a depressed bridge but with nostrils opening downward like those of Mongoloids rather than forward like those of Negroids. They run to deep-set eyes beneath a prominent ridge of bone (a "beetling brow"), large jaws and teeth, and abundant curly hair and beards. Typical Australoid scalp hair is dark brown and wavy or curly; in Australia it is sometimes blond. Like Caucasoid hair, it tends to turn gray and, in the male, to depart in middle age.

Lastly, scattered over a huge area in the Central Pacific, dwell the Polynesians: large, massive, brown-skinned, black-haired folk who combine Caucasoid, Mongoloid, and Negroid traits in more or less equal proportions. They have a jawbone of distinctive shape, called "rocker jaw."

Thus we have six main races. Arguments can, however, be made for a larger or a smaller number. Thus, some class the Polynesians as a type of Mongoloid. Others distinguish, as a race separate from the Australoid, the extinct aborigines of Tasmania.

The dark-skinned Melanesians of New Guinea and other islands in the Western Pacific present a puzzle. In the eastern part of their range, they approach the Polynesian type; in the north, they shade into the Micronesian type, commonly classed with the Mongoloids; in the Southwest, near Australia, they approximate the Australoid. Hence they are variously classified. So do not take this

or any other racial classification more seriously than it deserves.

The main races can be subdivided into smaller groups, called sub-races or types. Such classification, however, is even less definite and trustworthy than that into the major races. Although certain lands run to certain physical types, the differences among types within a race are naturally less than those among the races.

So, when one hears of the Nordic type of the Caucasoid race as prevailing in Scandinavia, it does not follow that all Scandinavians fit the Nordic type. In fact, there is no reason to think that they ever did. In the Nineteenth Century, the Swedish anthropologist Retzius surveyed recruits in the Swedish army. He found that in this, the most Nordic of nations, only 11 percent of his young soldiers answered all the description of the Nordic type. Although many were tall, or blond, or blue-eyed, or long-headed, only 11 percent were all these things at once.

It is, in fact, unlikely that there has ever been a wholly blond race. What happened was that blondness became much commoner in northern Europe, where under primitive conditions the pale coloring associated with it helped in survival, than it did elsewhere, where it was harmful. Neither does the fact that some distinctive type occurs here and there mean that it is a remnant of some former race. Although many Caucasoids have red hair, there is no reason to think that there was ever a red-haired race.

Still, certain types of the major races do concentrate in certain areas. By and large, we find northern Europe occupied by the Nordic type. These are tall, pale-skinned, blond, blue-eyed, and long-headed like Erik. "Long-headed" (dolichocephalic) means that the width of a man's skull at its broadest is less than 80 percent of its length from front to back. If the width is over four-fifths of the length, we call the man broad-headed or brachycephalic. (Some define, as mesocephalic or medium-headed, skulls between 75 percent and 83 percent as wide as they are long.) While useful, these distinctions are not all-important in classification, since skull form is affected by diet as well as by heredity. Malnutrition during childhood tends to produce an adult with a skull narrower than it would otherwise have been.

South of the Nordics dwell the Alpines, in a broad belt running from France through Switzerland and South Germany to Austria, Hungary, and the Slavic countries. The typical Alpine is of medium to short stature and stocky build, with a skin darker than the Nordic's, brown or black hair, brown or gray eyes, and a broad head. Snub noses are common.

Farther south yet lives the Mediterranean type. Mediterraneans are of about the same height as Al-

pines but darker and slenderer, with long heads, often curly black hair, dark eyes, and narrow, high-bridged "Roman" noses. Mediterraneans abound around the sea for which they are named and prevail in Jordan, Arabia, and southern Iraq.

In the Balkans, the Alpine type shades into the Armenoid, which it resembles except that Armenoids tend to be darker, with a muscular build, abundant curly dark hair, and a large, thick, hooked nose. Many Armenoids have their skulls flattened in back. This was once thought to be a racial trait, but it transpires that it is merely the result of the custom of tying infants on their backs in cradles. Armenoids flourish in Turkey, Syria, Iran, Afghanistan, and Pakistan.

Beyond the Armenoids, in India, come men of the Hindi type, much like the Mediterranean but much darker.

We could go on subdividing until the whole thing became ridiculous. For instance, a tall Armenoid or Alpine type, found in Yugoslavia and Albania, is sometimes distinguished as the "Dinaric" type. A common type in the Netherlands, Germany, Poland, and northern Russia combines the fair Nordic coloring with the stocky, broad-headed Alpine build. Should we (as some do) recognize this as a distinct "Baltic" or "Northeast European" type, or should we assume it to be merely a Nordic-Alpine hybrid or intermediate? There is no way to be sure.

The Negroid and Mongoloid races likewise fall into types. Among the Negroids are the Erythriotic type or Erythriotes in the Sudan and Ethiopia, with semi-Caucasoid features; the immensely tall Nilotics or Nilotes of the upper White Nile, devoted to their cattle and, until recently, to complete nudity; the Pygmies of the northeastern Congo; the big, powerful Forest Negroes (sometimes called Paleonegroids) of central and western Africa; and mixtures and intergrades everywhere.

The Mongoloids likewise include the most numerous single type of all, the Sinic, whose hundreds of millions swarm China, Korea, Japan, Mongolia, and much of Siberia. In southeastern Asia, Indonesia, and the Philippines, the Sinic type shades into the smaller, darker Malayan type. Other Mongoloids are the brown Micronesians of the Caroline and Mariana Islands; the Eskimos, long-headed but otherwise much like the Sinics; and the widely-spread Amerinds, varying in stature and skull form but sharing a coppery skin and the jutting profile shown on the old buffalo nickel.

Since Europeans overran the Americas, the Amerinds, when not absorbed by the invaders, have been reduced to little Mongoloid enclaves among the surrounding Caucasoids. Other racial enclaves exist elsewhere. The Ainu of north-

ern Japan and the Gilyaks of the Amur Valley, dividing Manchuria from Siberia, seem to be Caucasoids of a primitive, beetle-browed sort, surrounded by and gradually mixing with the dominant Mongoloids. The Kalmuks of the lower Volga form a Mongoloid enclave among Caucasoids. In southeastern Asia and adjacent islands are several groups of pygmy (or at least very small) Australoid or Melanesian peoples, such as the Negritos of the Philippines, the Semang of the Malay Peninsula, and the Andaman Islanders.

Several groups can be identified as distinct from the folk among whom they dwell, or as having played a rôle in history, without being races in any strict sense. I shall call such a group an *ethnos* (Greek for "tribe") and use the term to designate any plurality of human beings considered a distinct group—any race, nation, sect, tribe, caste, or class, regarded by itself or others as different in one way or another from the rest of mankind.

One such group is the Aryans. Before 2000 BC, cattle-raising, seminomadic barbarians in eastern Europe tamed the horse. From linguistic and archeological clues, we infer that this event took place in Poland or the Ukraine.

For a few centuries, exclusive possession of the horse gave these folk a great advantage in war. They set out in their rattling chariots, conquered the neighboring tribes, made themselves a ruling class, imposed their language and some of their customs upon their subjects, and finally intermarried with them. Then these mixed peoples conquered the next tier of tribes and repeated the process until they had spread their language, their horses, their bronze swords, and their sky gods from Portugal to Assam. The original language split into many tongues, which nonetheless kept similarities of words and grammar.

The conquerors who overran Iran and India about 1500 BC called themselves *Árya*, "noble ones." In the Nineteenth Century, when scholars realized the kinship of tongues as far apart as Icelandic, Armenian, and Bengali, they called the entire language group the "Aryan" family. Later linguists preferred the term "Indo-European," limiting "Aryan" to the eastern branch of the family.

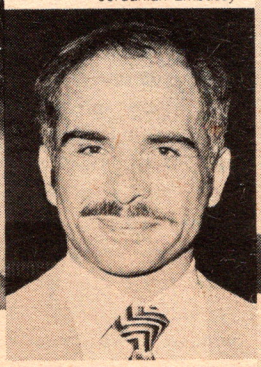
We do not know the race of the original Aryans, if so I may call the horse-tamers and their immediate descendants. Since the Alpine type predominates today where the taming probably took place, it is a good guess that they were Alpines. For all anyone knows, the original noble Aryan may have looked like the late Nikita Khrushchëv.

Whatever the Aryans' race or type, it soon disappeared by intermarriage with the conquered. In the Bronze Age, farming was not yet efficient enough, outside of a

Academy of Natural Sciences

Polynesian race (Samoan woman).

Jordanian Embassy



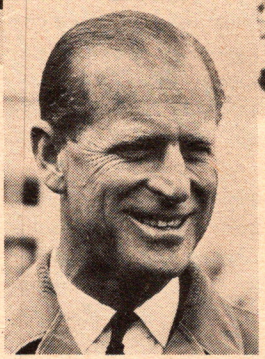
Caucasoid race, Mediterranean type (King Hussein of Jordan).

Smithsonian Institution

Negroid race, Paleonegroid type (Zulu).

Smithsonian Institution

Australoid race (Albert Namatjira, artist).



British Information Services

Caucasoid race, Nordic type (Prince Philip of Britain).

The pictures show typical examples of some of the existing races and types of mankind. Please notice two things: One, that there is a lot of variation within any one race and type, in size, shape, skull form, and so on; two, that when people of quite different racial origins are dressed identically, with the same cuts of hair and whiskers, they look much more alike than when they are tricked out in paint, feathers, turbans, bowler hats, and other tribal regalia.

few favored areas like Egypt and Iraq, to support large non-farming populations. Therefore the conquerors, who were bands of warrior aristocrats and their henchmen, must have comprised only a small fraction of the people among whom they lived. So the distribution of racial types in Europe and Asia was probably much the same at the start of recorded history as it is now. While the many conquests, migrations, and assimilations since then have doubtless affected the racial type of the sedentary populations, it would seem that they have done so only to a minor degree.

The Aryans are not known to have created any civilization of their own, although they overthrew

Smithsonian Institution

Mongoloid race, Amerind type (Red Tomahawk, a Dakota or Sioux).
Smithsonian Institution

Negroid race, Pygmy-Paleonegroid intermediate type (Congolese).

Smithsonian Institution

Academy of Natural Sciences

Mongoloid race, Sinic type (Fukienese).

Mongoloid race, Amerind type (Napo Indian, Ecuador).

Smithsonian Institution

Australoid race (Australian aborigine).

several in their path. Their main contributions to the world's culture were the domestic horse and trousers, which they are supposed to have invented to make riding easier.

Although it makes as much sense nowadays to claim pure Aryan descent as it does to claim pure Gothic or Etruscan descent, the Aryans became the subjects of a pseudoscientific cult, which attained remarkable influence during the early decades of this century.

The greatest of the scholars to solve the Indo-European linguistic problem was the German philologist Max Müller. In a careless moment, Müller alluded to the "Aryan race." He later corrected himself, saying: "To me, an ethnologist who speaks of an Aryan race, Aryan blood, Aryan eyes and hair, is as great a sinner as a linguist who speaks of a dolichocephalic dictionary or a brachycephalic grammar . . . If I say Aryans, I mean neither blood, nor bones, nor hair, nor culture. I mean simply those who speak an Aryan language."

The harm, however, had been done. The "Aryan race" was seized upon by a French diplomat and writer, the Comte Arthur Joseph de Gobineau. In the 1850s, Gobineau wrote *Essai sur l'inégalité des races*

humains (The Inequality of Human Races). He undertook to prove that the white race was the only one with creative ability and that the Aryan, which Gobineau identified with the Nordic type, was the best kind of white. The superiority of this type was proved, he said, by its beauty, as compared with the "ugly" nonwhites.[3]

Gobineau naturally classed himself as one of the Aryans, who as the Germanic Franks had conquered Gaul around AD 500 and made themselves the French aristocracy. France had ruined herself, he said, by destroying these "best people" in the French Revolution. It was no coincidence that Gobineau himself was a French aristocrat.

While Gobineau's anthropology was pre-Darwinian, tracing all men from Adam, others soon adapted Gobineau's theses to evolutionary theory. All deemed themselves Aryans, since nobody has ever written a book to prove his own ethnos inferior. (A partial exception is Carleton Coon who, in some of his anthropological books, hints that he deems the Mongoloid the most advanced race of man, followed in order by the Caucasoid, Negroid, and Australoid races.)

Many Germans agreed with Gobineau. In the 1870s, the Imperial government ordered a census of German schoolchildren to determine their degree of blondness. This caused a panic among the peasantry, who heard that the Kaiser, in playing cards with the Sultan of Turkey, had bet and lost 40,000 blond children. These, they whispered, were to be rounded up and shipped to Turkey. The census was called off when it transpired that the Germans would prove more Alpine than Nordic.

Some Frenchmen agreed with the general idea of Aryan civilizers but averred that the Aryans had been, not Nordics, but sturdy Alpines like most Frenchmen. In Italy, Sergi said that both were wrong; the Aryans had been gifted Mediterraneans like Sergi.

A follower of Gobineau was Houston Stewart Chamberlain. The son of a British admiral, Chamberlain was a frail neurotic with hallucinations of being pursued by demons. Educated on the Continent, he became a German citizen, a son-in-law of Richard Wagner, and a friend and confidant of Kaiser Wilhelm II. In 1899, he published a 1,200-page treatise, *Grundlagen der Neunzehnten Jahrhunderts*, translated as *Foundations of the Nineteenth Century*. The book became a bestseller in Germany and was later taken as gospel by Alfred Rosenberg, Hitler's ideologist, and in his youth by H. P. Lovecraft. In 1923, the aged Chamberlain met Hitler, then an obscure rabble-rouser, and hailed him as Germany's savior.

Foundations is a dreadful farrago of windy, rambling, tendentious,

verbalistic nonsense. The author undertakes to prove the superiority of the "Teutonic Aryan"[4] by a perfectly circular argument. Any historical character whom he likes, such as Julius Caesar (a brunet) or Jesus (of whose appearance nothing whatever is known) is proved a Teutonic Aryan by his virtues, and the virtues of all these Teutons prove Aryan superiority; QED. Dante's "noble countenance" shows that he, too, must have been a Teuton. Since Chamberlain likes Greek philosophy, Roman law, and Renaissance art, these things are obviously of Aryan origin. Things he dislikes, such as the Papacy, the Holy Roman Empire, and Socialism, must have been the doing of Semites.

While "mixtures" like the Germans are good, "mongrels" like the Jews are bad, and one tells the difference by "spiritual divination." Little Teutonic girls know the difference by instinct, for they cry when a Jew enters the room. If science disagrees, so much the worse for science: "What is clear to every eye suffices, if not for science, at least for life . . . One of the most fatal errors of our time is that which impels us to give too great weight in our judgment to the so-called results of science."[5]

These delusions were popularized in the United States by Madison Grant (*The Passing of the Great Race,* 1916), who hated Jews with Hitlerian passion, and Lothrop Stoddard (*The Rising Tide of Color,* 1920), who inveighed against "race treason" and "Levantine mongrels." According to these writers, Alpines were stolid, stupid, cowardly peasants. Mediterraneans were artistic and intellectual but frivolous and untrustworthy. Only Nordics were brave, wise, and true. The bloodstream of the Nordic Aryans must be guarded against dilution by mixture with the lesser breeds, lest civilization, whereof the Nordic was the originator and prime mover, perish from the Earth.

These books sold widely. Their arguments, while utterly unscientific, influenced the immigration law of 1924. The antiscientific Franco-British Catholic writer Hilaire Belloc satirized them:

"Behold, my child, the Nordic man
And be as like him as you can;
His legs are long, his mind is slow,
His hair is lank and made of tow.

"And here we have the Alpine race:
Oh! What a broad and foolish face!
His skin is of a dirty yellow.
He is a most unpleasant fellow.

"The most degraded of them all
Mediterranean we call.
His hair is crisp, and even curls,
And he is saucy with the girls."[6]

The Aryan myth had been debunked by the American economist William Z. Ripley in 1899. He

pointed out that, whereas the Aryanists called the Mediterraneans "artistic" in contrast to the "dull" Alpines, nearly all the great artists of the Italian Renaissance came from the North of Italy, which is more Alpine than Mediterranean. The "purest" racial types, he said, were found in backward, isolated places, with such primitive institutions as blood revenge. People migrated from such places to cities and not in the opposite direction. Hence, all civilized populations were more or less mixed. "It is not race," he added, "but the physical and social environment which must be taken into account."[7]

Ripley was the first to divide Europeans into Nordics, Alpines, and Mediterraneans. This scheme has held up better than most such classifications and is still fairly valid. We must, however, remember that all three types occur in varying proportions all over Europe, and that most Europeans do not perfectly fit any one of these ideal types but show a mixture of traits.

Ever since the dawn of history and probably long before, people have been migrating and conquering about all the large continental areas, so that all the major racial groups are of mixed ancestry. That is how we sometimes come upon traces of Australoid genes in South Arabia, or Capoid ancestry in North Africa, although there have been no real Australoid or Capoid ethnoi in those places for thousands of years. The only "pure" racial types are those of a few isolated, primitive tribes. So far from racial purity's being a virtue, mixed types have created most of the great civilizations, and there is some inconclusive evidence that such types display "hybrid vigor."

In his later years, H. P. Lovecraft got over some of his racial prepossessions, but he still spoke of the "Aryan culture stream" or "Aryan cultural traditions" as something precious. There is no substantial evidence that such culture or traditions persisted for many generations, or at most for many centuries, beyond the original Aryan conquests.

True, the late anthropologist Ralph Linton thought that certain Aryan attitudes had survived in the aristocratic code of medieval and Baroque Europe. He cited the European aristocrat's reverence for the military virtues, his casual attitude toward sex and religion, his fondness for hunting, fighting, and gambling, and his contempt for honest toil. In pre-Revolutionary France, a nobleman caught earning money by any means so shameful as trade or manual labor was held to have forfeited (*dérogé*) his rank. But it seems far-fetched to derive a cultural trait of a European landowner of, say, AD 1500 from a nomadic forebear of three thousand years earlier. Moreover, similar traits have appeared in the ruling classes

of other peoples, outside the Aryan orbit.

The Osmanli Turks were more practical. Every Turk, from the Sultan down, had to learn a trade, for none knew when it might please Allâh to raise up the lowly and cast down the mighty. So Mehmet the Conqueror was a skilled gardener, Süleiman the Magnificent a goldsmith, and Selim III a musician.[8]

Another nonracial ethnos comprises the Jews. Strictly speaking, a Jew is an adherent of the Judaic religion, although in practice the term is extended to persons of near Jewish descent who have left that faith. As everyone knows, the Jews (or Hebrews or Israelites) once formed a nation in Palestine, with Judaism as their state cult and Hebrew, a Semitic tongue closely related to Arabic, as their language. As far as we can tell, their racial makeup was a mixture of the Armenoid and Mediterranean types, like that of most of the peoples living around the eastern end of the Mediterranean.

Despite valiant resistance, the Jews were conquered and large numbers of them deported by the Assyrians, the Babylonians, and the Romans. Each exile scattered them about the Near East, and the Roman expulsion spread them over the Roman Empire. Many also emigrated of their own accord from their rather barren homeland; small groups went as far as Ethiopia and China.

Scattered about in small communities and kept distinct from their neighbors by their elaborate ritualism, the Jews inevitably mixed to some degree with these neighbors. In China and Ethiopia, assimilation was so complete that the modern descendants of the Jewish immigrants are merely Chinese or Ethiopians who observe Judaism. In Italy, the mixing (as shown by blood-group measurements) was less; but there the Jews were physically very similar to the folk among whom they settled. Although in some places they can be statistically distinguished, by physical measurements, blood types, and so forth, from European gentiles, that no more makes them a race than the British in India, in the days of the British Empire, formed a "British race" because they could be told from the Indians.

Another group of wanderers is the Gypsies. In the Middle Ages, certain migratory tribes in India, who made their livings by metalworking, casual labor, showmanship, and less praiseworthy occupations, migrated westward through the Muslim lands into the Byzantine Empire. From the Fourteenth Century on, they spread over Europe. Alarmed by this influx of swarthy nomads speaking an unknown tongue, Europeans called them by such fanciful names as "Egyptians" (Gypsies) or "Tartars." Asked who they were, they replied "Romani." This was the medieval

pronunciation of the Greek *Romanoi*, "Romans," since the Byzantine Greeks called themselves "Romans" and the Gypsies adopted the name of the last land they had visited.

Today, although the Gypsies still speak an Indian language, their Hindi racial type has become much mixed. Hitler tried to exterminate them along with the Jews, although in view of their origin they had a better claim than the Germans to the name "Aryan."

Still another mixed ethnos is the American Negro. Few present-day American Negroes are of pure Negroid descent. While their percentage of Caucasoid ancestry varies widely, estimates put the average between 20 percent and 25 percent. At the present rate, American Negroes may disappear by assimilation during the next thousand years.

Since well-preserved prehistoric human fossils are rare, the racial history of man from the late Pleistocene to the beginnings of history is not known in detail. Enough is known, however, to give a general idea.

During the decline of the Würm glaciation, between 10,000 and 25,000 years ago, men were distributed somewhat as follows: Caucasoids inhabited Europe, the northern fringe of Africa, and southwestern Asia, Mongoloids lived in China, Siberia, and the Americas, Negroids dwelt in central and west-central Africa. Most of eastern and southern Africa was occupied by Capoids. Australoids were found in India, Southeast Asia, and adjacent islands. Polynesians dwelt in other parts of Southeast Asia and Indonesia.

By the beginning of the Christian Era, Caucasoids had spread eastward over India, expelling or absorbing the Australoids. Many Indians show an Australoid strain; I once knew an Indian nuclear physicist who was physically a perfect Australoid.

The Mongoloids expanded southward into Southeast Asia and Indonesia. The displaced Australoids moved to Australia, New Guinea, and Melanesia. The Polynesians moved even further, to the islands of the Central Pacific. In Africa, the Negroids expanded at the expense of the Capoids, taking over the whole continent south of the Sahara except for the southernmost tip.

From AD 500 to 1500, several movements took place; of northern Europeans from Germany and Scandinavia into the lands of the former West Roman Empire; of Arabs over the dry lands from Spain to Iran; of Mongoloid nomads—Huns, Avars, Kumans, Magyars, Turks, and Mongols—into Europe, the Near East, Iran, India, and China. None of these conquests, however, seems to have greatly changed the racial distribu-

tion of the Old World, even if the Volga Kalmuks are a remnant of the hordes of Genghis Khan, and one occasionally sees traces of Mongoloid ancestry in Hungarians and Turks.

After 1500, the European Caucasoids greatly expanded. They overran the Americas and Australia, reducing the natives of these continents to pensioners dwelling in enclaves. They brought so many enslaved Negroids to the Americas that in places the Negroids became the dominant element. They conquered much of Asia and most of Africa, but these continents were already so populous that in no large area did European settlers become a majority. During the last few decades, most of their rule in these places ended.

The main distinctions among races seem to be adaptations to climate. Sometimes the connection is obvious. Thus the dark skins of Africa, India, and the South Sea Islands are a protection against tropical sunlight. The smooth, bulky Polynesian body, with its even layer of subcutaneous fat, may be an adaptation to a life in which swimming plays a large part.

Other traits, however, we cannot be sure of. For instance, why should Caucasoids and Australoids have been short-changed with scalp hair that so often loses color and, in the male, falls out at an early age?

In the Pleistocene, people had few ways of protecting themselves against bad weather. Therefore climate had a strong evolutionary effect. Erik's pale skin, beard, and long, narrow nose are suited to the sunless skies and cool, damp air of northwestern Europe. Where direct sunlight is rare, a pale skin lets the sun's ultra-violet rays penetrate. These rays stimulate the production of the hormone calciferol, lack of which gives children rickets. Erik's beard protected his throat when he was hunting or fishing in cold rain or sleet. His nose provided an air-conditioning system to warm the air before it reached his lungs.

Juma, on the other hand, is adapted to life in an extremely hot climate. His dark skin withstands the rays of the African sun. His woolly hair forms a natural sun helmet to shield his brain. Abundant sweat glands keep him cool; wide, flaring nostrils make deep breathing easy. His long-limbed form gives him a high ratio of surface to mass, so that he easily radiates away excess heat.

As for Sojo, his Mongoloid ancestors probably came from Manchuria or Siberia, where they evolved a form to withstand the world's severest winters. His stocky, short-limbed build gives him a low ratio of surface to mass and helps him to retain his body heat. His flat, fat-padded face enables him to wander abroad in sub-zero gales without freezing his nose. His yellowish-tan skin saves him from

being burned by the glare of the sun on snow. His hair, like Juma's, is a good insulator, because the coarse hairs enclose large air spaces. The Mongoloid race is the most adaptable of any, suiting itself to extreme cold on the shores of the Arctic Ocean, extreme heat in Indonesia and the American tropics, and high altitude in Tibet and the Andes.

Erik, Juma, and Sojo represent extreme human types, with whom it is easy to see the relationship between form and climate. With many other racial traits, however, the relationship is not so clear. The prevalence of certain blood types in certain areas probably reflects the resistance of persons with blood of those types to the common local diseases.

Much nonsense has been uttered about race, and not all of it by members of the Aryan cult. The question of racial qualities became confounded early in this century with the question of heredity versus environment.

After three European biologists rediscovered Mendel's laws of heredity in 1900, popular versions of the new discoveries gave the public an exaggerated idea of the importance of heredity in determining personality. If Father was a baseball fan, Son was expected to be one, too. These notions were combined with the Aryanist cult to engender fables about "sound pioneer stock" and "good aristocratic blood."

During the 1920s and '30s, a reaction set in. This was partly a correction of previous excesses and partly due to other factors. These factors swung the general climate of opinion among psychologists, sociologists, and other social scientists to an extreme environmentalism, which prevails to this day.

According to this view, heredity accounts for practically nothing in a person's qualities. All is the result of his environment or experience. If heredity does have an effect, it is undemocratic, and we should pretend that it does not exist. This idea harkens back to the theory of John Locke in the Seventeenth Century, of the mind as a blank tablet, on which experience writes ideas.

Another factor was a reaction against the pseudoscientific racial doctrines of the rising Nazi movement.

Still another factor was the spread of Marxism. Marxian philosophy assumes an extreme environmentalism because it helps to promote the Communist cause, on the argument that under Communist rule everybody, being brought up right, will grow up intelligent, virtuous, and altruistic. By this argument, plus fakery, Trofim D. Lysenko in the 1930s persuaded Stalin to put him in charge of Soviet agronomy and biological research. Genetics was suppressed; at least

eight geneticists were shot on trumped-up spy charges; and the poor Russians ended up hungrier than ever.

In 1948, while the arguments over Lysenko raged, a Communist-sympathizing American academic, John K. Jacobs, argued that Lysenko must be right because "classical genetics is . . . theoretically inadmissible on general philosophical grounds."[9] "Theoretically inadmissible" is Communist jargon for "politically inexpedient."

Finally, there is an element of self-interest in the devotion of social scientists to environmentalism. As a child psychologist once told my wife: "If we didn't believe that you can do anything with a child by controlling its environment, there wouldn't be a job for us."

Believing all men to be born literally equal, an extreme environmentalist is a dogmatic antiracist. Lately, research into possible racial differences has become widely taboo.

In 1967, a scientific committee of the United Nations issued a statement that "Differences in the achievements of different peoples should be attributed solely to their cultural history."[10] Interesting if true, but saying it does not make it so.

In Washington, DC, Negroes objected to the segregation of public-school pupils by ability, because they found most of their children relegated to the lower-aptitude "tracks." In 1967, they got a court order ending the practice, on the premise that, since we *know* the races to be equal in ability, any test that shows otherwise must have something wrong with it. In fact, we do not *know* anything of the sort, although there is evidence (which I shall come to) that points in that direction. The result of ending the separation of pupils by ability is to reduce education to the level of the lowest "track," since the stupider pupils (called by such euphemisms as "underachievers" or "late bloomers"), unable to keep up, raise so much hell that nobody learns much of anything.

Lately, scientists like Arthur R. Jensen, who have found what they believe to be evidence of Caucasoid superiority over Negroids, have been subjected to abuse and hostility for their unfashionable views. They have been snubbed by their colleagues, denied publication of their papers, and barred from speaking at meetings. They have received threats and demonstrations from students, with the acquiescence of many college administrations, either in sympathy with the students or too cowardly to defend their colleagues' freedom of speech.

In 1969, thirty Negro students made a disturbance that kept the physicist William Shockley, who has campaigned for views similar to Jensen's, from speaking at Dart-

mouth College. A New York State medical official, Benjamin Pasamanick, approved the students' action on the ground that Shockley's ideas were "arrant nonsense" and "viciously harmful."[11] Like Hitler and Stalin, Pasamanick is evidently all for freedom of speech—provided only that the speaker agrees with him.

Outside the social sciences, the question of heredity versus environment is no longer alive. Genetics has gone beyond it. A few traits like eye color are wholly hereditary; a few like language are wholly environmental.

Most traits, however, are the joint product of heredity and environment. If either the heredity or the environment is changed, the trait, too, is altered—how much depends upon the trait and the circumstances.

Sometime around 1935, the Newman-Freeman-Holzinger tests indicated that children of different heredity (different parents) reared in the same environment (the same family) differed among themselves in IQ, on the average, at least twice as much as children of the same heredity (identical twins) reared in different environments (different families).

Subsequent tests of twins, siblings, and adopted children over the last forty years have not only confirmed these findings but have also implied that heredity was even more influential in determining intelligence than was shown by the original tests. In a crude, unscientific manner of speaking, heredity has between two and four times as much force as environment in determining intelligence.[12]

Prejudices aside, what do we know about the connection between race and ability?

Some physical differences are obvious. The Nilotes are the world's best high jumpers because of their great stature. Eskimos withstand cold, and Tibetans altitude, better than most men.

Races differ in their resistance to various diseases. During the age of European expansion, many primitives, like the Mandans of Montana and the Polynesians of the Marquesas Islands, were nearly wiped out by the white man's diseases, to which they had never before been exposed. With modern medicine, however, many such ethnoi, once on the road to extinction, are making a comeback.

Before gunpowder, large men had an advantage in war, because they could run faster, reach farther, hit harder, and wear heavier armor than small men. But this advantage could be nullified by superior arms, drill, and discipline. When Caesar besieged the capital of the Aduatuci in Belgium and began to build a belfry or movable siege tower, "This sight at first caused them a good deal of amusement . . . As a

rule, the Gauls look down on us for being so small of stature compared with their own larger selves; so now they inquired how little creatures like us, with our weak hands and feeble physiques, could possibly imagine that we were going to lift up so massive a tower and place it on top of their wall." [13]

But Caesar's wiry little Italians won anyway. Nowadays, any military advantage of bodily size is trivial, as the United States found in Vietnam. Likewise, adaptations to climate have become less important with improvements in clothes, houses, furnaces, air-conditioning, and diet.

Two evolutionary forces have worked on *H. sapiens* from prehistoric times on down. One is the effect of climate in causing the inhabitants of different areas to diverge into distinct races. The other is the tendency of genes to be spread by intermarriage with persons outside one's own immediate group.

If we allow four generations per century, all that is needed is for a man and a woman living ten miles apart, in each generation, to marry. In this way, a gene can be carried 20,000 miles—almost around the Earth—in 50,000 years. One can see why, probably, everybody alive today is a direct descendant of everybody who lived and left descendants 50,000 years ago.

If the effect of climate is to split the species into races, the effect of gene mixture is to homogenize the species and modify the divergent types back toward the average. If two parts of the species are completely isolated from each other, so that no gene mixture can take place, the splitting force operates unchecked until the species divides into two, which would no longer be interfertile.

In the Stone Age, when mankind consisted of a lot of little, widely-scattered hunting bands, the people of different areas were partly isolated. Therefore racial differentiation would in time have made several species out of one. With the rise of technology, however, populations became denser and travel easier. Therefore the mixing of genes became the stronger factor.

Now the whole tendency is towards a merging and homogenization of mankind. That is not to say that the Chinese will ever become partly Caucasoid and partly Negroid, because it is hard to see how enough Caucasoids or Negroids would ever migrate to China materially to affect the racial type of the Chinese. But, in a few centuries, the little racial enclaves, like the Kalmuks in Russia or the Iroquois in the United States, are likely to disappear by assimilation.

Since the tendency throughout history has been towards racial as-

similation rather than differentiation, we should expect to find racial types in their most distinct and different forms in prehistoric times. A common theme of writers of historical fiction, like Robert E. Howard and Henry Treece, has been the invasion of Britain by waves of immigrants. The writers commonly assumed that a gang of blond Nordic giants overcame a population of short, dark Mediterranean aborigines.

For the reasons given, however, Britain was probably at its most Nordic before 2000 BC., when archeological evidence becomes abundant enough to let us trace these migrations. True, the present inhabitants of the British Isles are a mixture of Nordic and Mediterranean types, with some Alpine and other breeds thrown in. But, so far from prehistoric Britain's having seen the repeated conquest of small brunets by towering blonds, the fact was probably the other way round. Until the Scandinavian invasions, beginning around AD 800, the natives in each case were probably taller and blonder than the folk from more southerly lands who overcame them.

The difference might be large in one case but trivial in another, depending on whence the invaders came. The arrival of the first Aryans from 1500 to 1000 BC, the Celts in the Fourth Century BC, the Belgae in the First Century BC, and the Saxons in the Fifth Century CE would have had little effect on the racial makeup of Britain, since the newcomers differed but little from the natives. But the conquest by the beer-drinking, copper-using Beaker Folk from Spain around 1700 BC, and by the Romans in the first century CE, would have decidedly darkened the British complexion. These two invasions, in fact, may fully account for the Mediterranean strain in Britain.

Despite the fact that they were sometimes physically smaller than those whose lands they took, each wave of newcomers had some technical advantage over the natives; copper over stone, bronze over copper, iron over bronze, or Roman drill and discipline over slapdash Celtic onslaughts. And thus, at least twice, the swarthy shrimps beat the golden-haired giants.

Racists have made much of the fact that Caucasoids have, on the average, larger brains than Negroids. But, if that proved Caucasoid superiority, then Polynesians and some Mongoloids must be superior to Caucasoids, since they have still larger brains. In fact, save for certain types of feeble-mindedness associated with very small brains, there is no sure relationship between size of brain and intelligence.

Races have also been praised or blamed according to their rôles in creating civilizations. Here, too, the evidence is ambiguous. Agriculture

seems to have been discovered once by Caucasoids in the Near East, once independently by Mongoloids in Southeast Asia, and at least once more independently by Mongoloids in the Americas.

Civilization in the strict sense, with cities, large-scale government, and writing or metals or both, has been independently invented at least three times. The first time was around 4000 BC, in the Near East. The inventors were not pale European Caucasoids but swarthy oriental ones. Thence civilization spread westward to the Atlantic and eastward to India and China. The second and third times were by Mongoloids in the New World, in Central and South America, about 2,000 years ago.

Since all the Old World civilizations have been in touch with one another from the beginning, each has influenced all the others. Two, however, arose semi-independently, because they were partly cut off from other civilizations by mountains and deserts. The first was in China, whose Mongoloid folk, beginning around 1500 BC, achieved a high degree of civilization. The second was in West Africa, where, about two thousand years ago, simple civilizations began to form around the Bight of Benin. They had evolved only about to the level of the predynastic Egyptians when cultural influences from Europe overwhelmed them. Nobody knows what they would have achieved if let alone for a few thousand years.

The score for civilizations is: independent creation, one Caucasoid, two Mongoloid; semi-independent creation, one Mongoloid, one Negroid. These results are inconclusive. As for Nordics as civilizers, down to a thousand years ago Northern Europe, the Nordic homeland, was a backward, barbarous place. Only in the last few centuries have circumstances, such as vast deposits of coal and iron ore, enabled the North Europeans to catch up with and in some ways to surpass their southern neighbors in culture and power. Nor is there any reason to think that the present North European preëminence will prove any more lasting than the earlier hegemonies of the Arabs or the Mongols.

"Intelligence" is a vague term, but it essentially means mental power, just as "strength" means physical power. Although it is hard to define intelligence precisely, we can see, for example, that whereas the Nobel Prize winner Professor McBrain is more intelligent than Ahmed Jones, the current heavyweight boxing champion, Ahmed Jones is just as surely stronger than Professor McBrain.

Exact measurement of these qualities is hard. To measure strength, one can measure a man's separate physical powers, such as his ability to run, jump, throw

things, or lift weights; but a good runner may be a poor weight-lifter and vice versa. So "strength" is not one ability but many, and there is no standard way to add or average them.

The same with intelligence. One man may be good at balancing accounts; another, at medical research. But there is no way to compare John's skill as a chess player with William's success as a lawyer.

Intelligence tests measure several simple mental powers, such as ability to handle words and numbers, to remember things seen and heard, or to solve simple puzzles. Within limits, such tests are useful when given to people belonging to one ethnos, who speak the same tongue and have much the same culture, customs, and outlook. These tests can easily pick geniuses and feeble-minded persons out of the crowd. While one person's scores may vary slightly according to how he happens to feel or as a result of luck, they are still effective in predicting the testee's probable future success in school and in life.

In testing people of different backgrounds, however, we run into trouble. The testee's environment and history affect his thinking. No test completely ignores the effect of environment, although some, such as fitting plugs into holes in a board or tracing a route through a maze, come closer to this "culture-free" ideal than others.

One cannot, for instance, expect a good score on a written test from an illiterate primitive. Even when pencil and paper have been explained to him, he would feel somewhat as you would if given a Chinese writing brush and told to copy a row of Chinese characters, while Doctor Fu-Manchu stood over you with a stop watch in one hand and a headsman's sword in the other.

Differences of language are also an obstacle. When Negro children from rural Virginia were tested, they were asked to write the opposite of certain words. They left the spaces blank because they had never heard the word "opposite." So are the attitudes of the testee. When a psychologist had tested rural Italian schoolchildren, the teacher showed him a theme that one had written:

"Today a foreign doctor came to the school and the teacher told me to go alone with him into another room, I was terribly afraid and commended myself to the Holy Virgin. As I left the classroom I asked Pietro to say an Ave Maria for me. But the doctor only wanted me to do some puzzles for him." [14]

Cultural attitudes, too, affect the outcome. Modern Americans are notoriously time-conscious, whereas people of many other cultures cannot understand why they should finish a task in a given number of seconds. Some primitives discuss

every decision with fellow tribesmen and become uneasy and unhappy when forced to think out answers for themselves.

Americans who speak of racial mental traits usually think of the American Negro. Many comparative intelligence tests have been given to whites and blacks, both in the United States and in the West Indies.

When any large group takes such a test, their scores arrange themselves in the bell-shaped or Gaussian probability curve, with a few morons at one end, a few geniuses at the other, and the mass of ordinary folk between.[15] When two such groups, one of which is abler than the other, are tested, the scores of the better-qualified group form a curve to the right of the other curve; but the two curves overlap. A minority of the duller group is brighter than the average of the brighter group, while an approximately equal minority of the brighter group is duller than the average of the duller group.

The ratio of these minorities to the whole of their respective groups is called the crossover. If 25 percent of the duller group surpasses the average of the brighter group, the crossover is 25 percent. If the two curves are congruent, the crossover is 50 percent—the maximum. When the peak of one curve is 15 percent to the right of the other, the crossover is about (depending upon the exact form of the curves) 15 percent. A smaller difference in the position of the curves means a larger crossover and vice versa.

In Caucasoid-Negroid intelligence tests, whites have nearly always shown an advantage, the peak of the white curve usually occurring about 15 percent to the right of the black curve. Some of this apparent Caucasoid superiority is obviously due to environment, especially in urbanization and education. In the Kaiserian War, for instance, although whites scored higher in the Army Alpha Test than blacks from the same areas, Negroes from Illinois, New York, Pennsylvania, and Ohio, most of them city-dwellers, averaged higher than whites from the rural states of Arkansas, Georgia, Kentucky, and Mississippi. Likewise, Negro children who move from country to city show a visible rise in IQ scores; the longer they dwell in the city, the higher their scores become.

The big question is: Is *all* the difference in white-black test scores the result of environmental differences, or is there an inherent, hereditary average difference between the two groups? This question cannot be answered by tests like those of Newman, Freeman, and Holzinger on twins, for the good reason that there is no such thing as a pair of identical twins, one of whom is a Caucasoid and the other a Negroid.

We may call a person's inherited mental capacity his "genotypic intelligence," as opposed to the degree of intelligence that he actually develops. The latter would be his "phenotypic intelligence"—the product both of inherited capacity and environmental stimulation.

Having read some of the literature, I suspect that the question has not yet been finally answered, although it may be before many more years have passed. The test results are ambiguous, and the arguments over them are highly mathematical. Perhaps we can reach some tentative, provisional answers. Meanwhile, the fact that the answer is not finally known does not stop people from uttering self-serving pronouncements on the subject.

Some think that, even if tests of racial intelligence work, they should not be given at all, because professional racists will exploit them and ethnics who make low scores will suffer injured feelings. One says: "The wise scientist will not devote himself to research on the relation between race and ability; the wise university will not honor those who do. Indeed, as the universities are withdrawing from war-related research, ought they not to draw back from research on the possibility of genetic determination of ability?"

This is like the attitude of those robed and cowled Inquisitors in the Rosicrucian advertisements, saying: "This knowledge must die!" The objection is not wholly frivolous, since the effects of a discovery cannot always be predicted. On the whole, though, men seem to suffer much more through ignorance than through knowledge. The best thing in the long run, I am sure, will be to get the facts.

One can even make a plausible *a priori* argument for the superiority of the more primitive branches of mankind. All species are subject to degenerative mutation pressure. Since most mutations—probably over 99 percent—are harmful, the species is kept from deterioration only by natural selection, which ruthlessly weeds out the misfits.

In civilization, people with minor defects survive and breed along with their hardier fellows. Hence harmful mutations are passed on and accumulate in the gene pool. So one would expect an Eskimo or a Bushman to be inherently "fitter"—more intelligent, alert, and rugged—than the average man of some long-civilized folk, because the primitive must have these genotypic qualities to survive at all. If he and the civilized man changed places during infancy, the ex-primitive might become a world-beater, while his opposite number simply died.

Some small evidence supports this idea. Among the long-civilized Europeans, white Americans, and Chinese, color blindness afflicts 6.9 percent to 8.2 percent of the males,

compared to a mere one percent or less among the Papuans of New Guinea and some equally primitive groups. Among the peoples who were until lately in the georgic or "barbarian" stage of culture, with agriculture and stock-raising but without cities or writing, the figures are intermediate. Amerind males have one to two percent color blindness; Negroids, three to four percent. Evidently, the folk who live closest to nature and who therefore need color discrimination the most have best retained this sense. Could the same apply to genotypic intelligence? The idea is worth pondering.

Writers on genotypic intelligence fall into two groups. The egalitarians are sure that all human races have the same genotypic intelligence.

The inegalitarians, like the late John W. Campbell, are equally sure that all races do *not* have this equal endowment; that members of one race average significantly higher in this quality than those of others.

An inegalitarian is not necessarily a "racist" in the sense of being hostile toward or contemptuous of members of some race, even if he honestly thinks those people's average genotypic intelligence to be lower than that of another group. Critics of inegalitarians, especially Marxists, are wont, however, to use "racist" as an all-purpose pejorative, as "red" and "fascist" were formerly used to discredit one's opponents regardless of their exact beliefs.

As between the two groups, the arguments of the inegalitarians have seemed to me, on the whole, much more scientific. Some have developed ingenious methods of testing intelligence, by which they try to compensate for the effect of environment on the testee.[17]

The arguments of the egalitarians, on the other hand, have struck me as a mixture of sentimentality, wishful thinking, and (with the Marxists) political expediency. As an example, after William Shockley was howled down by left-wing students in April, 1974, at Yale when he tried to present the inegalitarian view, the university set up the Woodward Committee to formulate a policy for dealing with such suppressions of free speech.

One of the committee, a law student named Kenneth J. Barnes, dissented from the majority findings. He argued: "If democratic, undominated discussion within the community so determines, we may prohibit the malicious advocacy of racist or imperialist ideas."[18] Translated from the Marxist jargon, that means that a good Marxist may, on his own authority, decide what opinions are "malicious," "racist," and "imperialist" and whip up a mob of his supporters (called by the euphemism of "the community") to suppress opinions

harmful to his cause, which is a worldwide monopoly of power for Marxists. Galileo, Servetus, and Bruno would recognize the logic.

In view of the quality of the two sides to the argument, I was prepared for the conclusion that, of that 15 percent differential in test scores, much or most was genotypic. I would have said so, despite any flak that arose as a result of siding with the so-called "racists." In the course of study, however, I came upon another datum, which throws grave doubts upon the conclusions of the inegalitarians, at least as far as concerns Americans.

Japan has a penalized caste, the Eta or (more politely) the Burakumin. These people have very much the same social and economic status in Japan that the Negro has in the United States. They live in shantytowns in secluded sections of Japanese cities.

The Ippan (non-Burakumin) Japanese regard the Burakumin with aversion. They consider them stupid, dirty, dishonest, irresponsible, immoral, and violent. For an Ippan to marry one is deemed a misfortune, disgrace, and embarrassment for the Ippan's family. Some Japanese pay lip service to the modern ideals of equality and nonprejudice but still feel uncomfortable if forced into intimacy with a Burakumin.

The Burakumin have significantly higher rates of crime and delinquency than the Ippan. Their children show lower IQ. Many display a singular apathy toward self-improvement, in contrast to the usual Japanese eager-beaver cultural attitude. On the other hand, during the present century the Burakumin have agitated for civil rights and for governmental favors to make up for past disadvantages.

The clinching fact is that the Burakumin are racially identical with the other Japanese. They are physically indistinguishable from the Ippan. Their origin is not racial but politicoeconomic.

Under the Tokugawa Shogunate (1600-1867), Japan had an extremely centralized, despotic, rigidly classified and stratified structure. Persons who practiced certain trades despised as "unclean," such as butchery, leather work, and executing criminals, were segregated in a hereditary caste. On the other hand, they were given a monopoly of these trades and protected against competition by outsiders. Hence the Burakumin. The Shôguns could hardly have done better if they had set out to perform a sociological experiment, to test the effects of outcaste status on people, independent of racial differences.

In theory, the Burakumin were emancipated in 1871, but the distinction between them and the Ippan has persisted for a century despite efforts by the government and by the leaders of and sympathizers with the Burakumin to erase it.

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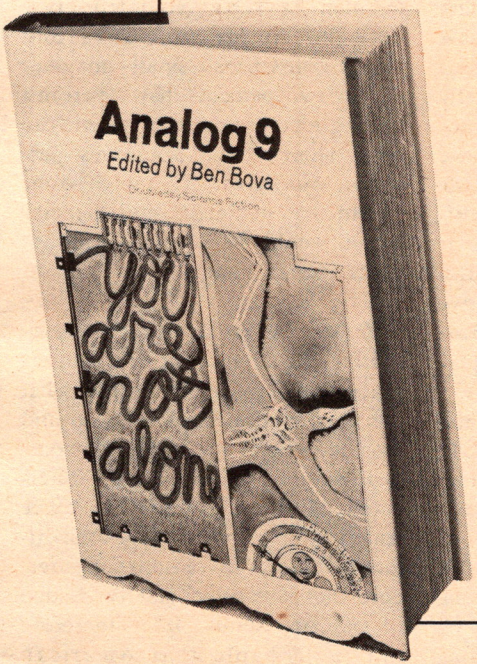

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The Burakumin have continued to display all the stigmata of behavior that have distinguished the mass of American Negroes since their emancipation.

Intelligence tests on Burakumin children have shown a differential of the same sort as that which American Negroes display vis-à-vis American Caucasoids. In a test of 41 pupils, divided almost equally between boys and girls and between Burakumin and Ippan, the Ippan averaged an IQ of 104; the Burakumin, 88. That leaves a differential of 16 percent. In another test on 351 pupils, about one-fifth of them Burakumin, the relative scores were: Ippan, 106.8; Burakumin, 92.2; differential, 14.6 percent.[19]

Within the limits of experimental error, this is identical with the 15 percent white-Negro differential among American pupils. So it begins to look as though the sentimental egalitarians might be right. They would be right for the wrong reasons, as Columbus was when he insisted, on the basis of a wrong calculation of the size of the Earth, that he could reach Asia 3,000 miles west of Europe.

This is not definitive proof of anything. Japanese culture is very different from American (or at least it was before it began to dissolve in the new worldwide scientific-industrial-urban culture, now swallowing all the rest). Therefore the psychological effect of a given social institution in Japan need not be the same as that of a superficially similar institution in the United States.

Still, if this finding is confirmed by further tests, it should affect the argument over the American Negro. It looks as though any real differential in genotypic intelligence, between American whites and blacks, must be so small—not over one or two percent—that a person's belonging to one ethnos or the other tells nothing about his personal qualities. The crossover would be so large that neither group would have any significant genotypic advantage.

Before we go overboard in accepting the arguments of dogmatic egalitarians, we should think what the tests on the Burakumin do and do not show. They imply that outcaste status produces an IQ differential of around 15 percent. Since American Negroes display this differential, it is a reasonable inference that it is all or nearly all due to outcaste status. It is therefore not improbable that American whites and Negroes have substantial equality in genotypic intelligence. But this need not apply to all other ethnoi.

The tests do not even prove equality between American Caucasoids and African Negroids, since the Caucasoid ancestry in American Negroes would narrow any gap between them and American Caucasoids. They do not prove equality

between Caucasoids and Negroids on one hand and other races on the other. It might still turn out that Mongoloids are superior or Capoids inferior to either American group.

The tests do not prove that the American groups in question would, given environmental equality, score the same in every particular mental faculty, such as verbal facility, spatial perception, and so on. One might excel in one department, the other in another, so that they would average about the same. And they certainly do not mean that scientists who come to different conclusions should be persecuted with impunity.

Neither does the evidence support the view of extreme environmentalists, that all people are born with the same genotypic intelligence. Even if racial genotypic intelligence is nearly the same for each race, there is still a huge variation within any one ethnos.

The Japanese evidence does suggest that living in a penalized caste has a more drastic effect on development than most of the usual variants in one's environment, such as the personalities of one's parents, or whether they are rich or poor, or whether they live in the city or the country. Furthermore, the effects of outcaste life are passed down the generations for more than a century, almost as if they were a hereditary taint. Nor, despite efforts by governments and benevolent individuals, are such effects easily gotten rid of.

Further light might be shed on this question by similar IQ tests in India, comparing Untouchables with caste Hindus; or in Bahia, Brazil, where (I am told) Negroids dominate a mixed Negroid-Caucasoid population.

Even if different races should turn out to differ in average genotypic intelligence, this difference must be fairly small compared to the differences among individuals of any one race. And even if one average genotypic racial intelligence proves higher than another, that says nothing about any individual. It is like saying that Swedes are taller than Italians. So they are, on the average; but millions of Italians are still taller than millions of Swedes. He who takes umbrage at the fact that a test shows his ethnos at a disadvantage proves that he does not intelligently grasp the question. A man is as intelligent as he is, regardless of the performance of his co-racialists.

Despite the statistics, one can tell practically nothing about a man's mentality from his race. He might be bright or stupid, wise or foolish, honest or knavish, generous or stingy, brave or cowardly, kind or cruel. One can find out only by knowing him well. And that, alas, we can do with only a small fraction of those whom we meet in the course of our lives.

NOTES

[1] Lewis Carroll: *The Hunting of the Snark*, I, 1. 8; William C. Boyd: *Genetics and the Races of Man* (Little, Brown, 1950).

[2] Alternative terms are "Bushmanoid" for "Capoid" and "Congoid" for "Negroid."

[3] William Z. Ripley: *The Races of Europe* (N.Y., 1899), p. 455; Arthur de Gobineau: *The Inequality of Human Races* (N.Y., 1967), pp. 107, 128, 23ff.

[4] For the translator's "Teutons," Chamberlain used the scholarly term *Germanen*, which in German has a similar connotation.

[5] Houston Strewart Chamberlain: *Foundations of the Nineteenth Century* (N.Y., 1912), I, p. 266. For Chamberlain, see William L. Shirer: *The Rise and Fall of the Third Reich* (N.Y., 1930), pp. 104-11.

[6] Hilaire Belloc: *Short Talks with the Dead and Others* (Lon., 1926), p. 96.

[7] Ripley, pp. 526-29. Ripley called the blond northern type "Teutonic." Later, "Nordic" was substituted because "Teutonic," like "Celtic," "Slavic," and "Semitic," is properly a linguistic and not a racial term.

[8] Ralph Linton: *The Tree of Culture* (Vintage, 1958), pp. 78ff; Fanny Davis: *The Palace of Topkapi in Istanbul* (Scribner's, 1970), p. 103.

[9] Conway Zirkle (ed.): *Death of a Science in Russia* (Univ. of Penn. Pr., 1949); *Chemical & Engineering News*, XXVII, 5 (31 Jan. 1949), p. 306.

[10] *Objective: Justice*, III, 1 (Jan.-Mar., 1971), p. 14; M. F. Ashley Montagu: *Culture* (Oxford Univ. Pr., 1968), p. 267.

[11] *New York Times*, 6 Dec. 1969, p. 36.

[12] Berelson & Steiner: *Human Behavior* (Harcourt, Brace, & World, 1964), pp. 208-26.

[13] Caesar: *The Gallic War*, II, iii.

[14] Otto Klineberg: *Race Differences* (N.Y., 1935), p. 157.

[15] The formula for this curve is

$$y = \frac{y_o e^{1/2x^2}}{\sigma^2}$$

where y_o = maximum frequency and σ = standard deviation.

[16] Eleanor Greenwald, in *New York Times Magazine*, 21 Sep. 1969, pp. 4, 12.

[17] E.g. John R. Baker: *Race* (Oxford Univ. Pr., 1974); Arthur R. Jensen: "Race Differences in Intelligence," in *Harvard Educational Rev.*, XXXIX, 1 (Winter, 1969), pp. 1-123. I am not counting obvious crank literature, like J. L. LeBon: *Why Racial Integration Is A Vicious Crime and Why It Will Destroy The United States If Not Repealed* (New Orleans: priv. pr., 1965).

[18] *New York Times*, 26 Jan. 1975, p. E-18.

[19] DeVos & Wagatsuma: *Japan's Invisible Race* (Univ. of Cal. Pr., 1972), p. 261.

REBOUNDER

The first rule of success in business is to find a product that can be sold—profitably.

HAYFORD PEIRCE

The deceptively youthful-looking man from *The New Yorker* was accustomed to quickly establishing a first-name relationship with his subjects: under the guise of friendly informality, they could usually be counted on to say something deliciously ridiculous and self-incriminating.

This small, middle-aged Anglo-Chinese, however, was proving curiously formidable. Friendly? Certainly. A master of the teapot. But inviting informality? Definitely not.

The man from *The New Yorker* frowned. Was he actually intimidated by these slightly shabby Lexington Avenue offices, by the knowledge that in four short years Rider Factoring, Ltd. had spread from its modest one-floor office to encompass two entire blocks of buildings? Ridiculous. *The New Yorker* was not to be intimidated by material ostentation.

Was it the fact that this paunchy,

peculiarly-named person was reputed to be one of the most powerful men on Earth? Of course not. *The New Yorker* was no respecter of office: had he not once exchanged banter with Chairman Muskov himself?

No, it was more subtle than that. Perhaps the name itself. In common courtesy to the English tongue, one could hardly call a fellow "Chap." To hail him as "Foey" was even worse.

The man from *The New Yorker* sighed and surrendered gracefully.

"Mr. Rider," he said, glancing at his notes, "by now you're known throughout the world as the man who brought the stars to mankind. You are assumed to have prospered spectacularly from your sales of antipollution equipment, your guided tours for various galactic races to the smog centers of Earth, and your export trade in choice canned smogs to the gourmet shops of some 2,600 worlds. Would you care to comment?"

Chap Foey Rider sketched a modest gesture.

After a pause the interviewer continued on a keener note. "Well, what are your reactions to the animosity with which you are viewed in certain high quarters?"

"Animosity?" Chap Foey Rider raised an eyebrow. "You astonish me."

"The . . . er, feeling that membership in the Postal Union and the Galactic Confederation has benefited Rider Factoring, Ltd. considerably more than it has individual nations or mankind at large."

Chap Foey Rider inhaled deeply, then directed a didactic finger toward the view from his window. "Like the rest of mankind, I am now breathing unpolluted, non-carcinogenic, air; from the modest height of a seventh-story office I am able to discern the farthest reaches of Brooklyn. Is this to be styled selfish exploitation?"

"You will not deny, however," said the man from *The New Yorker* sharply, "that the intrusion of the Galactic Confederation has hardly proved to be a universal panacea."

Chap Foey Rider was unmoved. "I will unhesitatingly confirm the obvious: the Golden Age is not yet here."

"You would say that its prospect may, in fact, have even receded? That worldwide tensions have only been exacerbated by unfulfilled but quite normal expectations, and by what may appear to be an overly . . . shall we say, laissez-faire view of galactic responsibility toward upgrading the economic and cultural levels of Earth?"

Chap Foey Rider sighed. "Regretfully, I am neither the Supreme Creator nor even the Mandator of the Galactic Confederation: I am unable to alter universal fact. The Confederation and the Postal Union exist to further trade and commerce. Galactic-wide absence

of warfare, aggression, piracy, and general bad manners is necessary to promote the smooth functioning of a commerce and the common weal. Measures are taken to ensure these simple basics. Beyond that, I am afraid, the Galaxy subscribes to the perhaps outmoded theory concerning the free lunch and its availability."

The man from *The New Yorker* suppressed a snort. Really, this fellow was an anachronism, a positive Neanderthal at heart. In a moment he would be extolling the virtues of the market and the free enterprise system.

"In other words," continued Chap Foey Rider smoothly (a consequence perhaps of having had the same conversation a number of times with Wong, his youngest son), "the 27,000 members of the Confederation expect Earth to pay for what they receive. This necessitates a form of mutually acceptable exchange commonly called money. Earth valuta is of no consequence in the Galaxy. Galactic currency must therefore be obtained. Only by selling the Galaxy goods or services or luxuries which they fancy can foreign currency be derived. Once obtained, this Galactic currency can then be used to purchase extraterrestrial goods for our own use: antipollution equipment, for example."

"But can't you *understand,* there aren't enough Earth goods that they want? There isn't enough currency being generated! The stars are *ignoring* us! No one from Earth goes to the stars—they can't afford the postage of the beastly Postal Union! And who comes from the stars to Earth? Only your beastly alien tourists, gawping at our smog!"

"Oh, come," admonished Chap Foey Rider. "Commercial trade is developing quite nicely. Balinese dancing girls are in constant demand. Camels and kangaroos are inexplicably popular. 1935 Airflow Chryslers are worth their weight in gold. Genesee beer is experiencing a modest boom. South Vietnamese guerrilla leaders are in demand on a number of worlds (whether they are ever actually delivered by the Postal Union or are consigned to some Central-Core Unclaimed Parcel Room, however, is a matter I would not care to speculate upon)."

The man from *The New Yorker* was tight-lipped before such cynical disingenuousness as Chap Foey Rider warmed to his theme. "Ohio State wines, textbooks on phrenology, walrus tusk scrimshaw, Indian swamis, members of the Flat Earth Society, water dowsers, experts in the theory of planned obsolescence, all of these are well-received in various corners of the Galactic Confederation."

"But our *cul*ture, our works of *art,* our—"

"I am given to understand that some three million records of the soundtrack of the film *South Pa-*

cific are being shipped to Procyon." Chap Foey Rider shook his head in baffled wonderment. "I'm a Gilbert and Sullivan man myself," he explained.

On his way home, Chap Foey Rider stopped to buy an afternoon *Post:* SINO-RUSS BORDER BUILD-UP, Troops Massed, Diplomats Recalled, Tensions Mount.

He grimaced and, unusual for him, turned into Paddy's Pub, where he carried a Scotch and soda to a dim corner and leafed through the paper.

The events of the day were not cheering. A Chinese hydrogen bomb had been exploded provocatively close to the Siberian border. Chinese diplomats had been expelled from Hungary and East Germany. The few Russians left in Peking were under house arrest and menaced by government-organized mobs. Threats of war (purely defensive, of course) issued from both capitals.

The President of the United States had interrupted a state visit to England to return to Washington to prepare for the worst.

The Secretary General of the United Nations, negotiating in Canada with Quebec separatists, had no comment aside from stating that a meeting of the Security Council would be convened the following week to deal with the issue.

The Market was off 27 points, and food hoarding was reported in East Coast cities.

Elsewhere, France was threatening complete and final withdrawal from the United Nations, NATO, and the Common Market unless paid a percentage of all Galactic currency generated by other, unfairly-advantaged nations selfishly dealing with the stars for their own benefit.

This theme was echoed in Greece, South Africa, and Argentina.

Grape-pickers in California and the Teamsters Union were contemplating a strike against Standard Oil of Ohio unless California wine and national union officials were allowed to be shipped to the stars along with Ohio State wine.

In Detroit, where the specter of instantaneous displacement had caused a four-year slump in automobile production, a mob of laid-off Ford and General Motors workers attacked and burned to the ground the Chrysler plant where replicas of the 1935 Airflow were being turned out by the hundreds of thousands. After 14 deaths, the governor of Michigan was obliged to declare martial law.

Israeali commandos were attempting to wipe out the species *Camelus dromedarius* in a number of Arab countries, thus denying their enemies their sole source of intragalactic currency.

The Brazilian Army of Occupation was scouring Uruguay for the

soccer referee unfortunate enough to have presided at Brazil's defeat in last month's World Cup in Sao Paulo. Atrocity stories were rife.

Chap Foey Rider's lips tightened. To think of the World Cup was to think of Wong, erstwhile gridiron terror of the Ivy League. That a Rider, one of his own sons could—

But no. The world situation was catastrophic enough without needlessly dwelling on his son's failings, multiple and hair-rending as they were.

Leaving the *Post* behind him, he stepped out into the brisk crisp air of a late autumn afternoon. He breathed in with pleasure; then, frowning, extricated himself from a line that had formed outside an A&P. Hoarders. The war scare. War. Merely from an humanitarian viewpoint, war was to be deplored. But war was also bad for business, especially a business with branches in 97 countries. At the first scent of hostilities, overseas operations were always the first to be attacked by jingoist fools and hotheads of every nation. And war on Earth would almost certainly jeopardize the nicely developing trade with the stars.

Although—and now Chap Foey Rider came to a full stop—hadn't today's *Post* reported a rumor by one of their absurd Wall Street "experts" that overall trade with the Galactic Confederation had fallen off sharply in the past three weeks, that equipment in the Copenhagen and Teheran post offices apparently was being dismantled?

Chap Foey Rider came to a decision. From every angle war was unthinkable. Therefore Something Must Be Done.

With Chap Foey Rider, to decide was to act.

Within a few minutes he was in the inner offices of the Consul General himself, a superbly tailored alien of the same species as Xanthil, the Ambassador Plenipotentiary who four years earlier had established diplomatic relations between Earth and the Galactic Confederation. Aside from light golden down and a faint but pleasant tang of cinnamon, he seemed fully as human as Chap Foey Rider himself.

Sipping tea on top of his whiskey (War is Hell indeed, reflected Chap Foey Rider dolefully), he heard his worst fears confirmed.

Consul Medalando's voice was sharp. "It has been our experience that most worlds ready for membership in the Confederation have already achieved worldwide unity. Those few which have not, quickly do so under the impetus of anticipated benefits derived from trading with the stars as a single unit rather than as a passel of squabbling nation-states or city-states or what-have-you."

"Logic, I fear, may not be our strong point."

"Exactly. For the first time in my experience, membership in the

Confederation appears to be having the opposite of the anticipated planetary evolution: although it hardly seems possible, your nation-states are now more jingoistic and chauvinistic than before.

"Furthermore," and now his voice grew sharper still, "furthermore, some of your absurd rulers have actually attempted to use the Postal Union to further their unspeakable ends!"

"Indeed?"

"Indeed yes! In the past three years, our postal workers have intercepted some 200 nuclear devices mailed by various nations to various of their enemies. Even as we speak, one of your nations is planning the surreptitious mailing of 200,000 crack commandos to a nation's capital not 200 miles from here."

"What!" Over the years Chap Foey Rider had come to harbor a perhaps sentimental affection for his adopted country's capital city and its somewhat amusing system of government. Granted its failings, it was still clearly preferable to any other he had observed.

The Consul raised a palm. "Have no fear. The Postal Union has one inflexible regulation: an absolute embargo on the pornography of violence. No soldier or weapon shall ever use the Postal Union."

In spite of himself, Chap Foey Rider mopped his brow.

"However," continued the Consul, "you see the situation in which we find ourselves. The Confederation and the Postal Union naturally find it distasteful, indeed, demeaning, to be forced to play the role of gendarme to such a disorganized, warlike, even barbarous world. In short, my dear sir, it is no go."

"But surely—"

The Consul shook his head, regretfully but firmly. "Existing contracts will naturally be honored in full, to do otherwise would be unethical. As for the future . . . the Postal Union will gradually liquidate its operations, and the Confederation will withdraw. Someday, my dear Rider, someday perhaps when your squabbling tribes have wiped their runny noses clean and have made at least a start toward responsible, organized world government, perhaps then . . ."

His steps leaden, Chap Foey Rider made his way home. Never before had he confronted such a problem: how to unify the world before breakfast and still turn an honest dollar? A poser. Distinctly a poser. Even for a man who assessed his own worth as shrewdly as Chap Foey Rider, it would be a major undertaking. Conceivably, he reflected, for he was always honest with himself, conceivably it admitted of no solution.

Sighing, he pushed through the entrance of the old five-story brownstone his father had purchased in the far-off days before World War Two.

His father, a scrawny, bird-like figure wrapped in a shawl, was in the drawing room, engaged in a game of chess with his present wife, Chap Foey Rider's stepmother.

Chap Foey Rider's lips tightened, a mixture of admiration and distaste. Strong-minded to the very end, the old man, who had once shocked Mayfair with a Chinese bride, had taken unto him a buxom blonde some 60 years his junior. She was, in fact, about the age of Chap Foey Rider's eldest son.

Still, reflected Chap Foey Rider as he murmured polite greetings, the old man kept his wits about him even in his tenth decade. It had been he, for instance, who insisted that Chan, the graduate of Stanford Engineering, be sent to Sagittarius for medical training. With special emphasis on geriatrics and rejuvenation techniques . . .

Making his way upstairs, he encountered his four-year-old grandson. Young Richard was totally absorbed in bouncing a bright yellow ball off the living room wall, oblivious even to the shards of Ming dynasty vase which littered the Kirman-Lavehr rug.

His eyebrows raised, Chap Foey Rider continued upward.

He found Wong in the third-floor study, his leg stretched out before him in a plaster cast, the television blaring.

"Superbowl, Superbowl," snapped Chap Foey Rider, "how about concentrating on contributing something to the family rice bowl for a change?"

Wong was shocked. "Superbowl, sir? But this is the World Series! Baseball. The World Series."

Chap Foey Rider slumped into a leather easy chair. His eyes closed. "Very well, the World Series," he muttered. "One would have felt that your planetary urges had been more than satiated by your experience at the World Cup, or whatever it was."

Callow youth he might be, Wong still retained the grace to blush. "Really, sir, it's hardly my fault if I get caught in a riot."

"No? It appears that your vaunted college career of brokenleg running stood you in little stead."

"Field, sir, broken*field* running," said Wong plaintively.

"I stand corrected. Reverting to prime causes, however, I was given to understand that you were in Sao Paulo for the purpose of installing antipollution equipment rather than for the World Cup."

"It was Sunday, sir."

"Ah. It was Saturday, then, that under your direction the pollution displacement equipment was focused on Sao Paulo Municipal Futbol Stadium rather than some 93 million miles away, that is, the center of the Sun?"

Wong closed his eyes in painful memory. "How was I to know the metabolism of the alien workers would convert coconut water to al-

cohol? It was their way of playing a small practical joke."

"So that 40 tons of concentrated industrial pollutants materialized on top of 200,000 rabid Latin Americans just at the moment Brazil was attempting the tying goal?"

Wong nodded miserably.

"I am astonished that you escaped with your life. Perhaps I have unjustly deprecated your skills as a brokenfield runner." Wearily, Chap Foey Rider climbed to his feet. A hot tub, some concentra—

"Wow!" shouted Wong, "did you see that double play?"

"Oh, go take a flying dive," rejoined Chap Foey Rider, and marched from the room.

"A flying dive," he mused, soaking in the scalding tub. "A flying dive, a flying dive . . ."

Chap Foey Rider erupted from the tub like a leaping trout, ran naked and dripping into the study, propelled Wong's wheelchair at manic speed into his office, and slammed the door behind them. It was after midnight before they emerged.

The meeting was held three days later in the offices of the Consul General. Present were Chap Foey Rider, the Secretary General of the United Nations, Admiral Corringer from the White House, Dialectician Bobinovich from the Kremlin, Soldier of Delightful Serenity T'sai from the Forbidden City, Cultural Minister Ravello from the Elysée Palace, and Permanent Secretary Harloughby from Downing Street.

Chap Foey Rider smiled benignly. If the fate of a world hanging in the balance oppressed him he gave no indication of it. He turned to the alien. "What, sir, would you say is the average age to which the average member of the Galactic Confederation can hope to attain, bearing in mind the diversity of races?"

The Consul appeared to ponder deeply before replying. Chap Foey Rider watched him with pleasure. How painstaking their rehearsals for this meeting, how satisfying to deal with a thorough-going professional. There was an expectant hush. "I would say, Mr. Rider, on the order of seven to nine thousand years. Not including the few races who give every indication of virtual immortality."

Chap Foey Rider continued after the noise had subsided.

"As you gentlemen are aware, it is quite untrue that no human beings have visited the stars. Not many, perhaps, but nevertheless a fair number. Enough to give us a fair picture of the Confederation. What do these travelers tell us, gentlemen? They tell us of a galaxy filled from one end to the other with sentient, virtually immortal beings. Of a Golden Age that has lasted some millions of years. Of instantaneous travel, of universal peace, of no crime, of no pollution,

of no hunger, in a word, of no problems."

Chap Foey Rider took a deep breath. Now the moment was upon them. Would they believe him? But why not? It was not an outright lie, in fact it was nearly true, a matter perhaps of subtle exaggeration, an exuberant hyperbole.

"What, *M. le Ministre,* do you conceive of as the galaxy's most urgent problem?"

The Minister of Culture could only shake his head weakly.

"Boredom, *M. le Ministre.* Boredom is the entropy of the sentient galaxy. If *you* were to live 50,000 years, might you not begin to suffer some slight ennui, some surfeit of muchness, in short, boredom? Much of the galaxy's total endeavor is directed at finding means of alleviating boredom. How, Dialectician Bobinovich, is boredom alleviated?"

"Why, er, through novelty perhaps?"

"Exactly." Chap Foey Rider beamed, a pedagogue to his favorite pupil. "Novelty. There is a constant need for novelty, for new amusements, for new entertainments, for new distractions. Consider, gentlemen, our own beloved Terra. How do we ourselves find surcease from work and worries? Why, through the medium of games and sports. Where else is there to be found such a diversity of human endeavor, such a tribute to the human genius?"

"In *games?* Human *genius?*" exclaimed the Permanent Secretary.

"Certainly. Much of the richness of life is derived from games and sports, from a small child bouncing a ball to a Russian Grandmaster at the chessboard. All of your great nations are preeminent in one game or another: China in ping-pong, Russia in chess and hockey, England in cricket, France in pelota, the United States in baseball. Do you doubt that among the 27,000 worlds of the Galactic Confederation there are not thousands of planets eager, nay, avid, for the introduction of these exquisite creations of human genius?

"And remark: in a stroke the problem of Galactic currency is expunged forever. All of Earth will become a planet of exporters, a planet exporting gamesmen, sportsmen, teaching professionals, coaches, managers, Grandmasters, world champions, entire leagues it may be."

"In fact," interrupted Consul Medalando smoothly on cue, "I have already made preliminary inquiries through the Home Office in this regard. They were kind enough to place me in contact with a firm on Altair IV which is, apparently, the largest and most reputable agency specializing in—" He droned on sonorously.

Largest? mused Chap Foey Rider. Perhaps not. But most reputable? Certainly. Had not he himself incorporated it only the day

before? Consul Medalando was without question a reputable person, and as 49 percent owner of the new venture he too could attest to its probity. A hard bargainer, Medalando, but what else could one expect from the chosen representative of a galaxy devoted to trade and commerce?

"—an initial projection of three billion Standard Galactic Units over the first year," concluded the Consul.

"This is all well and good," conceded Russia, "the demand for Russian Grandmasters is obviously a universal phenomenon. I do not, however, see how it might bear upon our more mundane earthly problems." And he darted a sharp glance of hatred toward China.

"Think," implored Chap Foey Rider, "of what the stars have to offer: travel, riches, possible immortality. Is there any man or woman who treads this globe that would not leap at the chance to go among the stars? And now it is a possibility that all may hope to attain. On a mundane level, the increased commerce will permit increased tourism in the ordinary sense. On a higher plane . . ." he nodded toward Consul Medalando, who took up the theme.

"Entertainment Unlimited of Altair IV, eager to tap to the fullest the undeniable genius of this planet, stands ready to promote an annual competition with lucrative contracts awaiting those 1,000 people who in the next year contrive the most enthralling and entertaining new games, sports, or diversions. How can there be armies when millions of young men—at their countries' behest—are striving to perfect their backhands, their brokenfield running, their flying dives? How can there be chemical warfare laboratories where the finest minds in the world are engaged—at their countries' behest—in devising new games, inventing new sports? How can the nations of this planet be at each other's throats when all mankind, at last united, is striving for perfection, the perfection which may lead to the stars?"

"Horseradish," said Admiral Corringer rudely. "If you think a hyped-up Olympics is enough to bring about world peace, you're denser than I thought. Half the world *likes* to fight, whether there's any reason or not. You think *they're* going to turn to inventing new ways of tatting lace doilies, just for a trip to the stars?" The Admiral sat back, smirking.

"An excellent point," admitted Chap Foey Rider, "One to which I have devoted some little thought. Tell me, gentlemen, how much sounder might your masters sleep without the disquieting ghosts of the General Francos, de Gaulles, Rommels, Salans, Walkers, Himmlers, MacArthurs, Zhukovs, Giaps, Montgomerys, Lin Piaos, Spinozas, Papadopoulous, or all the other

professional cutthroats which your own countries may so rightly cherish, and the ever-present dreams of colonel's revolts and sudden juntas?

"What, silent? Pensive, perhaps? Considering, it may be, the greatest game of all?"

Suddenly the lights dimmed, and the room was filled by the surge of hundreds of thousands of figures fighting their way across a harsh plain lighted by a dim red sun. Dust clouds billowed and the boom of explosions and the ring of bugles filled the air. The shouts and cries of the tiny soldiers mingled with those of the participants of Consul Medalando's gathering.

"Nothing to be alarmed about, gentlemen," soothed Chap Foey Rider, "merely a computerized holographic projection. Realistic, isn't it?"

The figures grew slowly larger, the detail clearer, as if a zoom lens were being employed. Uniforms became distinct, faces individual. A shell exploded, a body tumbled over, headless, blood gouting.

Sickened, Chap Foey Rider turned away. Soldier of Delightful Serenity T'sai was less squeamish. He gazed wide-eyed. "Why"—he gasped—"it's, it's—"

"Exactly," said Medalando, "the Glorious People's Third Maoist Army in full panoply. A simulation of course, but rather well done, don't you think? Look, there on your left."

Heads turned. The scale receded. An SS Panzer division drove from a mountain ambuscade onto the hapless Chinese. Deathshead Commandos advanced behind Tiger tanks, were supported by howling Stukkas. Bombs fell, limbs scattered, extermination wagons were wheeled into position by grinning NCO's. The air reeked of blood, shattered organs, gaping intestines.

Chap Foey Rider closed his eyes, missing the sudden appearance of a giant Chinese head above the field of battle: an inset close-up. The face spoke. "He's calling down an air-strike!" shouted T'sai excitedly. "Now we'll show—"

The camera tracked back at fantastic speed as the A-bomb burst over the German division; the monstrous fireball blossomed. There were gasps about the room; half-blinded, deafened by the detonation, the spectators milled about in consternation.

The mushroom thickened, grew taller, lost definition as the camera moved back in. A still and silent battlefield now, a few lumps of charred cinder at the periphery; a few molten objects which might once have been tanks.

The ghastly plain flicked out, the lights returned. Chap Foey Rider swallowed noisily in the complete silence. "The Rider Plan, Part Two," explained Consul Medalando drily.

"You mean—"

"Exactly. War and killing are

certainly the most popular games of all—on Earth. Who knows? The jaded palates of the galaxy may find a little bloodletting curiously refreshing."

"You mean—real soldiers, real weapons, real *dying?*" breathed Admiral Corringer eagerly.

"Oh quite."

"What then of your Postal Union's hypocritical strictures on the so-called pornography of violence?" jibed the Cultural Minister.

Consul Medalando smiled blandly. "Extremism in the pursuit of entertainment is no vice. Is tight-rope walking to be made illegal because of the risks inherent? Nonsense! The armies of Earth are always over-subscribed. Cretins eager to maim and be maimed abound; sadists to drive them into battle are rife; the means of death are ubiquitous and overwhelming. Come!" He gestured briskly. "Let us arrange our first show. The Red Army, perhaps, versus a coalition? Rembember, gate receipts will be shared with the country of origin."

"You mean," asked Soldier of Delightful Serenity T'sai slowly, "the more soldiers supplied, the more galactic currency to that particular country?"

"Within limits, my dear sir. First, all soldiers must be strictly volunteer. Pysch-meds will ensure this; it is sport we are organizing, not an abattoir.

"Second, the market is paramount. It may be that Honduran soldiers are more prized for entertainment value than Chinese.

"Third, a tenth of all receipts, as well as full powers of organization and channeling of funds shall devolve upon the United Nations. All further terrestrial disputes will be settled firmly and bindingly by that body. Entertainment Unlimited will not permit its investment in millions of men and weapons to be jeopardized by unauthorized and unremunerative noncommercial warfare. Henceforth, all fighting will be done off-planet, to paying spectators only.

"And finally," said Consul Medalando, "Entertainment Unlimited is inflexible in its demand that a United Nations executor be named; a worldwide Commissioner of Sport, a Commissioner of practical experience, a man at home in the world of sport, a man able to deal with the stars as an equal. The man they have in mind, a Mr. Wong Rider, while young in years, offers, nevertheless . . ."

Chap Foey Rider closed his ears and eyes. Did he dare to dream? Had he found, at long last, a job—as benevolent despot to the world—for Wong Rider, that intractably square peg in the otherwise smoothly round hole of Rider Factoring, Ltd?

Bliss.

"Dreaming of mangled bodies, Rider?" hissed Harloughby. "Blood-smeared piles of money? I saw you shuddering during that

film or whatever it was. Can't take it, eh?"

"Certainly I shudder," admitted Chap Foey Rider. "I dislike suffering, even by fools. But evolution is always a fearsome business."

"Evol*ution?*"

"Of course. Which is why I can participate in this venture with a clear conscience: I have separated the evolutionary inept, those who will voluntarily fight and die, from those who have previously done most of the dying, the innocent and unwilling. Let Her Majesty's Commandos and the US Marines slice each other's throats at their will. I will sleep the soundest of sleeps."

Permanent Secretary Harloughby glanced at his grim features and hastily turned away, shuddering slightly in his turn.

Chap Foey Rider was considering. Best let the brasshats look to their own. In any case, Rider Factoring would not suffer. On the contrary. Already the half-dozen or so agents who represented the world's top professional athletes had been bought out and their properties signed to personal service contracts. The purchase of the American Basketball Association and the International Football League was accomplished, and he had high hopes for the National Hockey League.

More would surely follow. ■

Institute for Science Fiction Teachers

The second Institute for Science Fiction Teachers will be held at the University of Kansas, June 6 to 26, 1976. James Gunn, professor of English at the University, is organizer of the program.

Gunn, former president of the Science Fiction Writers of America and author of fifteen science fiction books, organized the Institute last year to prepare teachers who are being called upon to teach new science fiction courses at academic levels from junior high school to college.

Last summer's Institute offered teachers six hours of graduate credit in English for three weeks of intensive academic work. Participants attended regular lectures and discussions about the history, value and academic uses of science fiction.

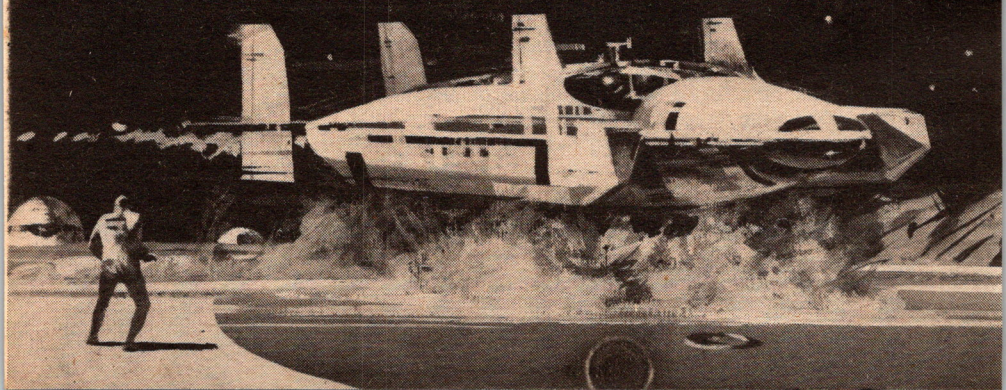
Guest lecturers for the coming Institute will include Gordon R. Dickson, Frederik Pohl and Theodore Sturgeon. Applications will be accepted until April 15, 1976. They should be accompanied by a $50 deposit against fees, which will be refunded upon individual cancelation before the April 15 deadline. After that date, fees will be refunded only if the Institute must be canceled. Regular summer session credit-hour fees—presently $126 for Kansas residents, $282 for nonresidents—will be charged, and housing will be available in a University residence hall for $100 for the three-week period.

Applications and inquiries should be addressed to James Gunn, Department of English, University of Kansas, Lawrence, Kansas 66045. For information by phone: (913) 864-3317.

TRANS-FIGUREMENT

The "conquest" of a new world offers two possibilities: Change the world to suit human needs— or change the colonists to fit the environment.

BOB BUCKLEY



Vincent Di Fate

A wind was howling out of the south. Dust curdled the normally dark sky with a ruddy film, and the lowering sun had painted the sheer, storm-eaten cliffs ringing the Noctis Mining Settlement with blood and fire.

McCormick shivered, despite the encapsulated environment generated within the confines of his suit. His body said he was warm, but his eyes were telling his brain an entirely different story. The Martian desert looked cold.

He turned and looked across the valley floor. But the stony plain held no other vehicles but a few hurrying ore carriers. Impatiently he glanced at the chronometer and saw that it was past four. The transport from Claritas Colony had been due at three.

Sigmund Portmeer will arrive at his convenience, not mine, he reminded himself, kicking absently at a crumpled can that rattled solemnly toward him, urged along by the shrieking wind.

As he waited, he thought . . . about changelings. They were still around, though never seen. Men still vanished in the remote wilds of the unexplored desert wastes. Tracks of empty vehicles led in crazy circles . . . and sometimes only tracks were found, ending abruptly on outcroppings of barren stone.

It was this that McCormick hoped to communicate to Bureau Director Portmeer in spite of his superior's orders to the contrary. Matthiessen wanted the changeling mess to disappear; it might make his management of the mining settlement suspect. If anyone were to insist upon knowing, the changelings were to be described as a laboratory error . . . a strange mutation. Nothing more.

His thoughts wandered on in this vein for some time. Then, a growing splotch of dust at the far end of the valley announced the tardy approach of the transport.

The large surface/air hybrid neared swiftly, the thunder of its air cushion booming louder and louder against the canyon walls. Dust swirled violently about the plastic skirts that entrapped the artificial bubble of lift pressure. Only the stern directional wings and whale-like upper surface of the hull loomed above the amber cloud.

McCormick waited until the transport had settled onto a paved parking area beside the Administration dome before walking toward it. A hatch began to pivot open on the hull, and a ladder ramp descended toward the ground with mechanical precision.

A smallish figure wearing a brightly tinted Mars suit was the first down the ramp. This one gave an arm to another who followed more hesitantly. The third to exit wore a suit of severe military black. Four gold stars signifying staff rank gleamed above the breast pouch.

Last out was the transport's pilot,

a glum-looking individual. His suit was plain, worn with much use, but carefully patched. Portmeer had a reputation for caution; thus the man must be the best pilot that Claritas had available.

McCormick moved to the foot of the ramp and stopped, surveying the little party carefully.

The bright blue suit belonged to a woman. She introduced herself as Portmeer's private secretary. She had a striking face, and shoulder-length chestnut hair. McCormick disliked her immediately; she looked too much like Jeanne before her transformation. Then he wondered if that were really so bad?

Appearances cast aside, she had done her homework.

"Director Portmeer," she said, "this is Tom McCormick, Vice Settlement Administrator for Noctis."

The tall man turned and gazed down at McCormick.

It was difficult for McCormick to control his shock. Portmeer was far older than he had believed. With money, and the right geriatric specialists, it was possible to stave off death. Portmeer had tried, but though he still lived, he had not conquered the ravages of time.

Yet the old man was still alert; his eyes were like steel as they probed McCormick, giving no hint as to whether or not he approved of what he saw. Finally he turned to the girl.

"You have the file on the mutants?" he asked with a voice like dry sand hissing down a chute.

The woman nodded. Her brown eyes flicked across McCormick.

"Everything is here. Perhaps more than this gentleman might wish."

Portmeer nodded, but did not speak. Instead, he gazed about the limits of the mining settlement. The sight was stark machinery and spartan bubble housing set against a raw and barren landscape. The sandstorm did little to improve the picture.

"I trust a tour has been planned?" Portmeer asked; his voice rasped over the radio link of the suits.

McCormick would have answered, but the old man cut him off with an impatient wave of his hand.

"We'll dispense with it . . . at least I will. The others will be the sheep. Laura will tape comments for my later attention. Now, call me a car!"

McCormick was startled by the demand, but he agreed, tuning in to the work channel of the settlement to make the request after Portmeer insisted stubbornly.

Three minutes later a sandcar arrived and braked in a swirl of dusk-purpled dust. McCormick and Laura assisted the old man into the cramped cabin of the tiny pressurized car, evacuated for the transfer. Its driver, a grizzled old roughneck who had lived much of his life out

in the desert wastes, watched with baffled interest. McCormick did not seal the hatch at once.

"Are you sure you want to do this, sir?" he inquired anxiously.

"Afraid I'll dig something up that you would prefer to see buried?" Portmeer demanded sharply, his eyes bright.

McCormick was unable to answer at first. His thoughts whirled.

Abruptly Portmeer grinned. He yanked the hatch shut himself.

As the car whirred off, McCormick followed it with his eyes, wondering, certain now that the old man would not be his pawn. Actually, he realized uncomfortably, he would have to be careful not to become a pawn for Sigmund Portmeer.

2

That night, after Portmeer had joined the group again, they had dinner in the official chamber of the Administration dome. Laura fussed about the old man like a mother bird tending a fledgling. Matthiessen, looking uncomfortable, put up with this for the duration of the meal, then excused himself early, pleading a late night inspection of a difficulty in one of the ore caverns.

Portmeer let him go with a careless wave of a withered hand. Laura had just forced him to swallow a large yellow pill, and was now checking his condition with an expensive medical monitor that Harkwit, the transport pilot, had fetched.

Portmeer smiled apologetically at McCormick.

"Sometimes," he explained, "the body rebels against the will. It is the curse of the very old."

"Nonsense," the girl chided. "You're as old as you feel."

Portmeer chuckled dryly and patted her affectionately. "At the moment I feel as ancient as life itself. We'll have to hurry . . ."

He broke off suddenly, as if he had said more in his weakness than was wise.

"Perhaps you should lay over a few days," McCormick suggested. "We could put your people up in the recreation dome."

"Won't hear of it," Portmeer snapped, suddenly all business again. "Tomorrow I expect to tour the sector: Tharsis, portions of the rift valleys, the highlands beyond. I'll expect everyone to be ready by six next morning."

Laura gazed anxiously at the old man, McCormick noted, but, surprisingly, made no protest against the outrageous plan.

"Six o'clock," the old man repeated firmly and struggled to his feet. The girl moved to help, but angrily he shook her off.

"Girl," he snapped, "your fussing will put me in my grave long before I want to go. If I'm going to live I need to fight. The day I start taking it easy is the day I start to die!"

The watery blue eyes, as sharp as daggers of brittle ice, flashed about the little room and centered on Kraft, the staff officer. Throughout McCormick's tour the military man had held an attentive silence, especially as McCormick had recounted the story of Jeanne Alexander's transformation into the first of the changelings. Now Portmeer jerked a thumb at the man imperiously and together the two of them departed with Kraft pausing only a moment to favor Laura with a sardonic, calculating gaze which the girl ignored completely. Harkwit laughed, and taking the girl by an arm before she could protest, led her from the room.

McCormick watched it all in uncomprehending silence. Too many hidden forces were at work among the members of Portmeer's party. He sank into an empty chair and stared at the ceiling of the dome. Even the trip was something of an anomaly. Any Bureau underling could have handled the tour. Typically the old man had kept close to his power base in Hellas City. Far too many amibitious undersecretaries were maneuvering to move up to his post once the feebly flickering flame of life in his ancient body guttered out. More than one had tried various extinguishers, but Portmeer was a tenacious old soul and thus far he had outlived his competitors. Yet he had lived so long by being smart. So what was smart about touring an out of the way mining settlement?

A conversation with Matthiessen the night before came to McCormick's mind. As usual it had begun with a discussion of the changelings. He had asked for search parties to examine the nearby deserts. For the fifth time Matthiessen had refused.

"Don't you imagine that Neanderthal man must have sat dumbly about fire-lit caves pretending that Cro-Magnon didn't exist?" McCormick had protested. "Now they're extinct!"

"Cro-Magnon absorbed Neanderthal into his own population," this had been Matthiessen's answer. "Your history is bad, Tom."

"History, hell! You don't remember seeing any Neanderthalers around recently, do you?"

But he had not won the debate. He had yet to win even one. Matthiessen's point was that the changelings were all dead of natural causes, or else they had gone off to live by themselves, determined to stay hidden.

And hidden they would stay, McCormick was sure of that, just long enough to build up their strength. Then they would surge from their caverns and challenge men for the domination of Mars. It was bound to happen, it was the human way . . . and the changelings were at least that much like their parent race.

3

Dawn on Mars was a time of tremendous cold. Not any colder than the night, of course, but with the watery, pale light of the distant sun just peeping over the canyon rims the shadowed flats were arctic in their brittle desolation.

The hull of the transport was frosted with a slight film of ice as they boarded. Harkwit had already arranged for fueling. The cabin was pressurized and warmed to a comfortable degree. As McCormick stripped off his suit he was reminded of autumn mornings spent a long, long time ago on the US sector of Earth, when he had walked between long rows of flame-leaved trees, his breath puffing out in front of him like an icy plume . . . and the hot mustiness of the schoolroom. His skin seemed to tingle in sympathy with the ancient memory as he folded his suit and put it into a locker beside Laura's.

Portmeer was forward, talking with Harkwit. McCormick could hear a faint whine as the holographic map device was cycled, and a course route was keyed into its minicomputer.

Kraft slammed the hatch and sealed it. The staff officer took off his helmet, set it on a vacant seat and began to strip off his suit. He ignored everyone else. So affected was his manner that even Laura, usually distant, nudged McCormick on his arm and winked.

McCormick grinned back at her.

Five minutes later they were in the air. The transport's liquid fuel thrusters lifted them high above the jagged maze of darkened desert canyons.

It was impossible to ignore the view. Even Kraft, stolid and silent, could not resist leaning close to one of the large ports to peer down at the landscape flashing past.

Only Portmeer, after a few minutes of observation, turned to work, using a headset to play back a tape Laura had given him.

McCormick decided to serve as a tour-guide to the girl and strolled to the rear of the cabin where Laura was perched on a seat before the aft port.

The transport was following a deep canyon that meandered across Tharsis. Tractus Albus could be seen as a broad band of yellow-white volcanic ash in the distance. But the girl was gazing wide-eyed at the two giant volcanoes whose dark flanks loomed at opposite ends of the horizon. Ascraeus Lacus had a faint plume of vapor streaming from a vent near its broad base.

"It's more beautiful than I expected," she breathed, glancing up at him. "Hellas Basin is so flat, desolate despite the farms."

"Beautiful and deadly," McCormick told her. "Hellas is at least a safe haven."

She shrugged rather impatiently at that comment. Then gave a sigh

of disappointment as the transport swung east, away from the volcanoes.

"We won't see them again until the end of the tour," McCormick began, but he was not to finish. The transport gave a sudden lurch that left him weightless for a sickening instant. The low overhead of the cabin cracked his head, and then he opened his eyes to find himself sprawled across the back of the girl's seat.

A foreboding silence dominated the craft. Then Portmeer shouted for Laura. McCormick untangled himself from the seat and stumbled after. But the Director only ordered him forward to see what was wrong.

As McCormick hurried up the aisle he was surprised to have Kraft grab his arm and stop him.

"Convince Harkwit to turn back," the officer hissed. "Tell him Portmeer ordered it if you have to, but get this transport headed back toward Noctis!"

"Why?" McCormick demanded, annoyed at the other's imperious attitude.

"Just do it!" Kraft snapped. "Move, man!"

McCormick stumbled as Kraft's large hand shoved him forward. He whirled angrily, but Kraft had already turned back to the port and was staring white-faced at the rocky landscape swaying beneath them.

The man was terrified, McCormick realized, and was so startled by the revelation that he forgot his anger. He hurried up the short stair that led to the control room.

As he pushed open the door a puff of acrid smoke stung his nostrils and made him cough. Harkwit, a fire extinguisher in one hand, the other grasping the wheel, was attempting to spray a fountain of blue sparks that cascaded down on him from the overhead auto-pilot console. Along with the sparks fell bits of molten slag as components and housing alike melted.

"Quick," Hawkwit shouted, slapping at his smoldering uniform. "Take the extinguisher!"

Groggily McCormick obeyed. But as he swept the vapor-spewing nozzle back and forth on the electrical fire he knew a growing hopelessness. The flames were spreading within the consoles, burning along shielded cables, touching off new fires that his extinguisher could not reach.

Harkwit was struggling with the controls, trying to halt the transport's shallow but steady descent through the tenuous air toward the flat, uncratered plain of Tharsis. Lost Valley made a bar of bluish shadow on the ragged horizon. All the while they fell in uncanny silence broken only by the shrill whisper of atmosphere past the hull and the sizzle and crack of the flames.

"I'm not winning," McCormick hollered finally.

The fire had managed to double its size. Those sections of the instrument console that were still functioning were ablaze with scarlet warning lights.

Hawkwit nodded, too busy to speak. The transport shuddered. Abruptly the thrusters, already diminished in effectiveness, failed altogether.

"Get aft," Harkwit told him hopelessly. "Tell the others to suit up and strap in tight . . . we're going down!"

At first McCormick couldn't move. The sight of the barren Martian landscape reaching up to smash them had hypnotized him. But at Harkwit's frantic urging he regained control and hurried aft.

4

McCormick pulled himself into the lee of a buttress of the cliff and out of the irregular blasts of wind. He ached everywhere, but gazing back at the wreck he wondered that any of them had survived.

The transport had torn a long gouge in the soft sand mounds of the floor of Lost Valley. Perhaps even Harkwit might have survived had not the craft used up the last of its forward momentum by butting its prow into the base of the long line of bluffs. Everything in front of the midships stabilizer fins had been smashed into a solid bundle of contorted metal, forming an impromptu coffin for the pilot and whatever dreams he might once have had. The surface effect skirt had been torn completely away and lay in a twisted heap halfway across the valley floor.

Harkwit dead, Kraft injured, the transport wrecked, but the indomitable Portmeer was still fit . . . somehow McCormick would have been surprised at any other circumstances now. The old man bore a charmed life.

But that charm might very well vanish with the coming of the Martian night. The transport was too badly damaged to serve as shelter, and they could not hope to survive too many nights in their suits; the batteries feeding the LS packs would go dead long before they ran out of oxygen.

McCormick, being the most fit of the party, and having the greatest knowledge of the area, had volunteered to scout the cliffs for caves. Millions of years ago—Earth years, since there had never been a race on Mars to chart the passage of the years—the highlands of Candor had been rent with glowing fissures out of which had vomited a highly mobile lava. The molten stone had flooded the westward-tilted plain and cascaded over the cliffs into Lost Valley, damming the shallow stream that had meandered across its broad and sandy floor. Other flows breached the ancient limestones of the cliffs with intrusive dikes and sills. The result was a

confusing stew of diorites and porphyritic basalts sundering and capping a great mass of dawn-age limestones.

Now McCormick prowled about the base of the basalt-iced cliffs hoping that this old activity might prove useful. As he searched he wandered farther and farther away from the wreck site.

At times the drooping curtains of frozen stone trailing down the cliff-face were pocked with gas bubbles. And the sun continued its slow dip toward the horizon.

McCormick climbed onto a shattered slab of lava, jumped to the gravel heaped on its far side, and scrambled awkwardly into a shallow, long-dry water course that looped in close to the cliff. Tiny, yellow-green plants dotted the ground like sand-etched marbles tossed away by a bored player. A solitary stick insect stalked among the Martian version of cactus with the maddeningly slow pace normal to its sluggish metabolism.

McCormick gave the creature a fleeting glance and hurried on.

He climbed from the stream bed and began to run. A narrow crevice opened ahead. He sprang into the air, pulling his legs up into a crouch to take up the shock of his landing . . . and sank to his waist as he broke the crust of what had happened to be dusty lava.

He had found his cave!

But was it large enough? Frantically he pawed away the loose stone, then stood erect and shouted, waving his arms in glorious release. The lava tube grew larger as it extended under the cliff. Once molten lava had squirmed in fuming torrents through the buried channel. But then the back pressure of the flow had diminished and the still liquid stone had cascaded back into the main pool of magma. That draining had left a tunnel, its walls formed of lava that had cooled and solidified.

Whistling cheerfully, McCormick hastily constructed a cairn of loose stone to mark his find and began loping back to the wreck. If they were to beat the sucking cold of the night they would have to hurry.

5

A strong, dust-laden wind was howling lonesomely around and through the shattering hull of the transport as McCormick drew up in front of the warped hatch. New-blown sand had nearly buried the stern, and the setting sun turned the broad ripples scoring the dune flank into flame-red ribbons burning against shadows the color of night itself.

Shivering despite his exertions, and the warmth of his suit, McCormick crept through the hatch into the darkness of the transport's interior. The ship felt dead, it seemed to exude an aura of morbidity. Nervously McCormick peered about the inky shadows for the others.

"Laura? Director Portmeer? I've found shelter!"

But instead of a glad shout, his only answer was a blast of wind that caused the wreck to shudder and moan deep in its fabric.

Fear seized him. He saw a mental image of the three survivors limping overland toward Noctis, leaving him behind.

Then a shadow moved slightly and McCormick knew a vast relief.

"Laura?"

There was no answer. But the deck groaned, as if a heavy weight had moved over strained braces.

The brief instant of relief was plunged abruptly into grim panic. McCormick fumbled for the light clipped to his belt. The yellow beam exploded into the darkness like a knife, sweeping across uneven ranks of empty seats . . . and centering suddenly upon a patch of darkness that would not be dispelled . . . a darkness that glistened and moved!

"Hello, Tom." The darkness spoke softly, with a voice like greasy death. "Remember me?"

McCormick did. In the glare of the lamp beam the features of the creature, once a man, were perfectly recognizable even though human flesh had been transformed to something resembling darkish jelly through which veins and musculature could be seen dimly.

The wind moaned, shaking the wreck again.

No one had ever called McCormick weak, yet this was too much. Exhausted, bruised by the crash until he felt like walking hamburger, McCormick swayed and toppled slowly to the deck. The light fell from his limp grasp and rolled under a seat, allowing the darkness to flood back.

6

McCormick awoke to find himself in a muted, bluish darkness, swaying jerkily within a hammock woven from twisted strands of dune moss. The hammock was supported on two long cactus spars, their bark polished by long use.

He was being carried by four large changelings. But he didn't see Haywood, the changeling who had met him in the wreck. Apparently Haywood had decided to send him on. What that destination might be McCormick had not the slightest idea.

However, the changelings seemed to know where they were going, following an unseen trail that wound through the blackness of the cavern that was broken only by the blue lamps the porters wore around their gleaming waists. The light glinted and sparkled off the travertine columns that thrust up through the flat floor of basalt like attenuated volcanoes.

The cavern must, McCormick realized, predate the volcanic activity. It had been formed by water percolating through the porous limestone, building stalactites and sta-

lagmites. But then the moisture-steeped cave had been abruptly flooded by torrents of red-hot, smoking lava. Now that it had cooled, the lava formed a perfect pavement.

They carried McCormick for what seemed an endless time. Then a glow swelled slowly in the darkness ahead. After a bit, McCormick saw that other changelings were approaching: two males, a female, and two children. All but the children carried baskets woven of the same material as McCormick's hammock, and within the baskets were orbs of luminous fungus.

The little group hurried past, exchanging brief greetings with McCormick's captors. The males gave the human hostile glares, the female ignored him. Only the children showed curiosity. They darted forward in unencumbered playfulness and peered through the strands of hammock at McCormick, laughingly pointing out the strange—to them—opaqueness of his skin, and its paleness. Then, obeying the orders of the males, the children reluctantly abandoned their "new thing" and followed their guardians into the darkness once again.

McCormick watched them go with a strange regret.

After a while the cavern began to narrow. Passages opened out of the walls, and they were forced to cross a noisy, shallow stream that tumbled roughly over the cobbles of its slimy bed, only to vanish abruptly into a wide, apparently bottomless crevice.

The ceiling lowered, festooned with streamers of softly glowing fungus. The darkness was loud with the plunk, plunk of falling water droplets. Checking meters mounted in the shelf of the helmet rim, McCormick saw that the temperature could be described as comfortable.

Another fifty meters of travel. The changelings entered a narrow passage whose walls were thickly encrusted with fungus. Soon, the garish crust had covered all the rock, pressing out into the passage itself like rubbery-textured appendages. They forced their way past these, coming at last to a dead end. The fungus was a solid green and blue mass to McCormick's eyes, but his guards knew more than he. Giving his pole to a companion, one of the changelings put his hands on a large knob and pulled. With a nasty, sucking sound a large part of the glowing plant mass pulled free, revealing a tiny chamber.

Amid a grim silence McCormick was tumbled out of his hammock and thrust into the chamber.

"We will close the plug again," the changeling who had exposed the chamber spoke when he was sure he had McCormick's attention. "You will remove your suit and leave it behind. Beyond is a second chamber where your friends await

your arrival. Once inside, close the plug."

"And if I don't?" McCormick said sneeringly, more in an attempt to bolster his own courage than to overawe the changelings.

The changeling shrugged with disappointing casualness.

"Either way we will have your suit. You will give it up, or we will take it . . . the choice is yours. Remember, though, that our touch on your flesh may trigger the transformation. Is this your wish?"

McCormick shuddered. Here was a weapon he had no defense against.

"Close the plug," he murmured. "I'll do as you desire."

He waited until the plug was back in place, then explored the far side of the chamber until he discovered the proper "handle." He yanked at the exit and it opened, allowing a puff of denser air to flood into his chamber. Abruptly McCormick realized that he was standing in the organic equivalent of an air lock.

Hastily he unseated his helmet and laid it aside. He was still struggling out of the suit when Laura's face appeared in the opening. Her wary expression exploded into a smile of recognition as soon as she saw him. An instant later she was beside him.

7

Kraft spoke bitterly, pausing at intervals to chew. The orb of glowing fungus he held in his hands threw reddish highlights on his features. His leg wounds had been dressed and seemed well on the way to being healed, thanks to a purple gel the changelings had daubed on them.

"So, he went with them. Hasn't been back since," he finished.

McCormick put down his own lump of fungus, little more than a tough rine, now, and glanced at the girl. She was glaring at Kraft with undisguised hostility.

"I get the feeling someone isn't telling me everything," McCormick said flatly. He looked again at Kraft, but the officer avoided his gaze.

"While I don't know the facts completely, I can guess," Laura snapped. "Our general here seems to have blood on his hands!"

Kraft turned white. His eyes went wide and flashed from the girl, to McCormick, back again.

Laura laughed. It was a viciously unemotional laugh.

"You think Portmeer didn't realize how badly your people wanted him dead?" she said. "His only mistake was thinking that they wouldn't act as long as you were with him." Again the laugh. "But then, I guess they decided that even *you* were expendable for the common good of the party."

The general's pallor did not subside. He stared glumly at his half-eaten meal of fungus and said nothing.

Laura turned to McCormick. "As you must have realized by now, our crash was not caused by an accidental malfunction. Certain powers within the Bureau of Extraterrestrial Lands, discouraged by the Director's unusual grip on life, and being at odds with his policies of self-direction within the central colonies, decided to assist fate in the performance of her duties. In short, they planted a thermite bomb on board the transport. After the crash, just before the changelings captured us, I discovered a second, a dud, hidden in the aft storage compartment."

McCormick swallowed, realizing that he had not done so for minutes. What the girl had just said disturbed him, though he had suspected as much. But at the moment their immediate problem was survival, not politics.

He was not given the opportunity to state this, however, for at that moment the plug to the chamber was reopened and two changelings crawled inside. McCormick recognized them both. One he knew, or rather had known, quite well. It was Jeanne.

No longer a loud, rebellious girl from Homeworld, she was a woman, beautiful in an unearthly way. Her smooth, translucent skin glistened with reflected, multicolored fire as she walked toward them. Her hair was long, draped about her shoulders like soft wings.

Haywood stayed a pace behind. Both changelings ignored Laura and Kraft. They were here for just one reason, McCormick realized, and he was it.

Haywood spoke first. "Still hate us, Tom?" he drawled, a slight smile on his features. "Cave or no, you'd be dead now! Noctis has been incredibly slow in sending out search parties. Curious, isn't it?"

McCormick didn't answer.

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in times to come Richard and Nancy Carrigan highlight our May issue with a new novel, "Minotaur in a Mushroom Maze," which mixes subnuclear physics, ancient Cretan mythology, and modern Mideastern politics in a mystery adventure. Kelly Freas' cover blends these elements as only he can.

Stanley Schmidt, whose 1973 serial, "Sins of the Fathers," ended with the Earth being rocketed out of the Solar System, tells (literally) "How to Move the Earth" in next month's science article. It's actually a preview of his next novelette, a sequel to "Sins," which will be featured in our June issue.

Also on hand in May will be George O. Smith, after much too long an absence, with an outrageous story that calls attention to a vital but previously overlooked fact about colonizing other worlds. Plus stories (space permitting) by Gordon Eklund, Stephen Robinett and others, and all our regular features.

Doubts warred within his brain, making a quick reply impossible. He studied the changelings. Haywood wore pants woven from a silky material. Jeanne wore shorts and a brief halter that made her seem extremely female . . . and desirable. He was sure that was no accident. Uncomfortably he shifted his gaze back to Haywood.

"If you continue to hold us here it can only mean a renewed killing of your people," McCormick said.

"Won't it be the same if we *do* release you, Tom?"

Jeanne smiled, and Haywood nodded in agreement.

McCormick felt himself flush.

"That's the conclusion we've reached, Tom," Haywood told him.

Silence hung heavy in the chamber. Everyone seemed to be staring at everyone else, as if they were at a duel, and not entirely sure who the duelists were.

Haywood broke the chain of silence.

"There is a way . . . one way, for all of you to leave this cave as human beings," he said.

McCormick could not prevent the surge of hope that awakened in his heart. He hoped his face remained an impassive mask in spite of it. "What do you mean?" he demanded.

For an answer, Haywood moved to the still open plug and gestured at someone standing in the air lock. A third changeling crawled into the chamber.

Laura screamed in dawning horror.

It was Portmeer.

8

For a long time Portmeer merely stood before them and stared at their stunned faces. Laura he favored with a sad, understanding gaze. Kraft received a harsher treatment.

The general, his courage expended, had crawled to the far wall. He crouched there, cowering.

Portmeer laughed, and it struck McCormick that for all the laughing going on, there was very little amusement in the air.

"At first my thought was to kill you, Kraft." Portmeer said at last. "Then I realized that they had betrayed you as much, if not more, than they had betrayed me. I'm the only ally you have left."

"You're a fool," Kraft growled, animal-like.

Portmeer ignored the statement. "You know too much," he continued. "While you live the plotters are in constant danger of being exposed, and that would spell their deaths, for the average Martian colonist is a decent sort, opposed to violence. Go back to them and you'll disappear, bet on that."

Kraft stared at the glowing floor thoughtfully. Apparently the same idea had already occurred to him.

"So what do you want?" he asked finally. "Everything has its price—how well I know that now."

Portmeer did not answer. Instead, he glanced from Kraft to McCormick, and back again, as if weighing invisible odds.

"My price is your support, because I'm returning to the Bureau to take up my rightful position . . . that of its Director."

McCormick stared at the changeling in disbelief. The idea was at best incongruous, at worst pure madness. He said as much aloud. And there was another factor. Portmeer's age.

"Look," he said, "even if we do support you, in a year's time you will probably be dead of natural causes. We'll be left out on that proverbial limb. Forget it, Portmeer."

Portmeer laughed, this time in genuine amusement.

"Dead? I see you do not really understand the beast you have been fighting for so long, McCormick. I'm a changeling, not some short-lived Earthly primate. I have at least five hundred years of active life still ahead of me . . . the next best thing to immortality. That's what I have to offer. Do you doubt that the inhabitants of the three inner planets won't jump at the opportunity? Look at me, both of you. How old do I look?"

For the first time, McCormick really looked at Portmeer, *at him,* not his mental image of what a changeling was. The infirmities of age had vanished. No longer was the director a near cripple. He might be in his early forties had he been human.

"But not everyone wants the change, and if you should accidentally touch a human . . ." McCormick started to protest.

"A pseudoskin has been devised," Jeanne spoke up. "We're wearing them now. The change is a voluntary act. We rely on normal reproduction now. A stable population has been established."

Silence fell again.

"And you want me to give all of you my seal of approval . . . or else?" McCormick said at last.

"Your reputation is well-known," Portmeer reminded him. "If the foremost opponent of the changelings were to suddenly declare that he was mistaken and come out on

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Place	Title	Author	Points
1.	Children of Dune (Pt. 1)	*Frank Herbert*	1.250
2.	The Perfect Cop (tie)	*H. H. Morris*	2.850
2.	Angel (tie)	*Herbie Brennan*	2.850
3.	Seven Is a Birdsong	*C. L. Grant*	3.250

their side, well, others might change their minds as well. But there's no 'or else' clause connected to my deal despite what Haywood might have implied. You can be either a great help, or a great harm to me, McCormick. But I'll be damned if I'll blackmail you into giving me aid. I want your support, not your lip-service. No matter what you answer, we're going back. I have a house to clean. If you want to help me, fine. But make up your mind fast, I'm leaving now!"

"And if I say no?" McCormick asked quietly.

"You'll be dropped off at Noctis. The changelings have lent us one of their rocket craft."

McCormick glanced at Kraft. No longer did the general seem a beaten man. He was standing erect, supporting the dazed Laura with one arm.

"Are you playing it his way?" McCormick asked sharply.

"Damn right," Kraft told him stubbornly, a slight smile on his face.

"And you?" he asked Laura.

Weakly the girl nodded. "This was what he was searching for. There were rumors . . . reports, that the changelings were longer-lived than human beings. It was the only way out for him . . . only I didn't really believe it was so. Now I know better."

McCormick shrugged finally. There was a time to be flexible, and a time to be hard. He could hear the storm wind blowing, so he bent.

"OK, Portmeer," he said distinctly. "You've got your PR man."

Epilogue

The rocket plane was waiting atop the plateau. They had risen through a kilometer of elevator shafts to reach it.

A bitter cold wind whistled shrilly over the rounded rocks. Dawn was but an hour old. The aircraft's aluminum skin shone brightly in the sunlight.

Haywood stood by the still open hatch with McCormick. The others were already inside. The changeling wore a thick fiber jacket against the cold, nothing else. McCormick, in his bulky Mars suit, envied him.

McCormick started to swing the hatch shut, but Haywood grabbed at its rim and prevented its closure.

"Remember, Tom," he said, "you still hate us, no matter what you told Portmeer . . . habits don't change in an instant . . . but humans get old. There's a place for you here . . . with Jeanne. All you have to do is ask. Those are her words."

Then Haywood stepped back and allowed the hatch to close. He ran back to safety as the plane's engines flared into life and sent the tiny craft leaping up into the purple sky. He was still there as it circled the plateau a last time. He waved, and above him humans waved back. ■

QUARRY

The conflict between man and machine is really a battle between a human and a machine that is directed by another human.

MARY H. SCHAUB

Stab underhanded, they said—that way, the knife blade has a better chance to slip between the ribs. But robots don't have ribs. Stab a robot and you might risk electrocution.

Lusar wearily dredged his memory for other suggestions gleaned over the years regarding close combat tactics. The chop across the nose, the openhanded

NEVIN WASHINGTON

slap against the ear, various kicks and jabs—none of those could be effective when one's adversary was insensible to pain. Of course, if other humans were present, the robot would react to bodily assault. For appearance's sake, it was programmed to respond when normal heat, pressure, or impact levels were exceeded. Still, Lusar knew that despite the surface reaction, the robot would not be damaged by any physical blow he could deliver.

Find it first—that was his primary concern. Lusar couldn't fight the robot until he found it . . . or until it found him.

Deliberately, he wrenched his thoughts into another channel. A distance marker flashed past the window of his monorail module. In an hour, he would be back in the Capital. Ample space there for a fugitive to hide from pursuit. Lusar knew the city well. He had worked in the Ministry of Communications for twelve years, ever since the prisoner exchange had rescued him from an enemy confinement camp during the last war.

Lusar still had nightmares about the months he'd endured in that camp. Curiously, they didn't often concern the harrowing living conditions, or even the frequent beatings; mainly, in his dreams, Lusar pictured himself listening to the endless drone of talk from his cell mate. Hour after hour, the dry, hoarse whispering had grated on his nerves. He could shut his eyes even now and hear it—a muttering burr of sound, no words intelligible, but the ears strained to make some sense of the noise. Brodt's voice . . . would he always be haunted by it?

Only in his mind, Lusar thought, firmly stifling the phantom monolog. Brodt was dead. That was really why Lusar was in this module, speeding back to the Capital.

Lusar recalled the surveillance tape that Mirsen had run for him. Pictures only—Brodt had demanded freedom from audio surveillance. For once, the State was forced to capitulate. Brodt was the only person who could produce a fully programmed android.

Android, they call it, thought Lusar, grimacing. It's still a robot to me—a nasty, unnatural, mechanical imitation of a man.

The State relied on Brodt's creations for espionage activities at the highest security levels. Brodt vowed he wouldn't work if eavesdropped upon. The State knew he would detect any attempt to deceive him, so they settled for the visual surveillance.

At the initial briefing at State Security headquarters, Mirsen had run the tape for Lusar. The viewscreen showed Brodt, his back to the camera, his fingers flickering across the programming console. Nearby, shrouded in wiring, a human shape lay in the Acquisition Cubicle.

"Brodt's masterpiece," Mirsen had said. There had been pride in his voice, and something else. A tinge of fear? "This is his most advanced model. He named it 'Anton.' "

Lusar had stared at the paradox, suppressing a shudder. It looked human, but it wasn't. It had no true humanity. It was a counterfeit, a threatening fraud. "What's so special about this model?"

"It will be the absolute assassin," Mirsen had confided. "Tireless, impervious to weather, stronger and faster than a man, free from any human weaknesses—it is a triumph. Brodt was just completing the final units of preliminary information transfer. Unfortunately, his fatal attack occurred during a period when our camera was operating automatically. The doctors assure me that even had we observed the attack's onset, there was little chance to save him. As you see, he collapsed abruptly and died within seconds."

On the screen, Brodt's stocky figure had stiffened for an instant, one hand clenched at chest level. Lurching to his left, Brodt had stabbed at several keyboard switches, then sprawled forward across the console.

Mirsen had sighed at that point. "A great loss to the State."

"Indeed." Lusar's attention was drawn to the figure in the cubicle. It had sat up, carefully detached each wire draping its limbs, and with complete disregard for its stricken creator, marched smoothly out of the camera's field of view.

"Our last record of Anton," Mirsen had admitted, "except for the casual sighting reported by a junior secretary in the Ministry of Food Production next door. If we can rely on his description, it would seem the android clothed itself in a laboratory coverall and simply left the building. Of course, we have the tapes from our regular corridor cameras, but the area was congested with workers changing shifts. We have not been able to isolate Anton amid the crowd."

"Where would it go?" Lusar had asked.

"That is your assignment . . . to help the State find Anton."

Startled, Lusar had been momentarily speechless. "But I know nothing of such matters! My work is concerned with words, not with . . . not with creatures like that."

"You are the only living person closely linked with Brodt's past. His immediate relatives died years ago. You knew him. You spent nineteen months with him in that despicable confinement camp." Mirsen had counted these points off on his fingers, as if they somehow qualified Lusar as an expert on Brodt's life's work.

"Forgive me, but I do not understand how my knowledge of Brodt, such as it is, could be of use to the State."

Mirsen had sounded annoyed. "With Brodt's death, our produc-

tion of androids must cease. He kept vital processes to himself, contrary to our most serious requests that he train others to assist him. Anton is our last, most valuable android, and it is missing. We *must* find it."

"That is clear enough," Lusar had replied. "Surely you can rerun the programming tapes and analyze what directives Brodt gave Anton."

"We cannot. When Brodt fell against the console, he pressed certain keys. The entire final briefing segment was erased before we discovered the calamity. Brodt often incorporated information from his own background experiences in programming his androids. He claimed that it 'humanized' his models. It may be possible for you to deduce where Anton would go from remarks Brodt made to you about his past."

A sudden thought made Lusar pause. "You said Anton was designed to be an assassin," he had observed. "Could it be that Brodt simply directed Anton to go out and seek its target?"

"No, no, the State had not informed Brodt of Anton's first target. You need not fear any personal harm from the android, if that's what's worrying you. Your task is to help us locate it and we will escort it back here for its final briefings."

"I know nothing of your procedures," Lusar had protested. "Surely you can circulate Anton's description among your State Security personnel. They are trained to search for people wanted by the State."

Mirsen grimaced, his voice rising. "We have broadcasted its description, for all the good it will do. I told you, Anton is Brodt's finest creation. It can disguise itself, utilizing interchangeable features. It *has* no single face. It took its disguise apparatus with it, so we must assume that it intends to alter its appearance. You are our basic hope, Lusar! The search will have to be based on information supplied by you."

A numbing succession of hours had followed that interview. Faces blurred as one inquisitor after another probed Lusar's memories of Brodt, his habits, preferences, old acquaintances, favorite geographical areas. He had told them everything he could remember, raking through recollections that he thought he had suppressed forever. Late afternoon shadows were darkening the room when the last inquisitor hurried away. Lusar stared blankly at Mirsen, not really seeing him.

Something small, something insignificant nagged at Lusar's mind. Something Brodt had said once . . . it flickered in Lusar's subconscious just out of reach, like a bright fish darting in murky water.

Mirsen had poured another mug of coffee substitute, then pushed it aside without tasting it. "Enough for today, Lusar. You're repeating

yourself. We will analyze all your reminiscences. You can go back to your Ministry now."

Lusar had stood up. "If I think of anything else," he had asked, "shall I call you?"

Mirsen yawned. "Here's my number. If I'm not available, your message will be taped."

"Should I investigate at all? If I can't reach you, I mean. If I should think of a likely place, should I go there and look around?"

Mirsen had smiled, the superior smile of the professional humoring the amateur. "Why not? If you can identify Anton by sight, you will have confounded us, certainly." He extended a flexible blue plastic card. "This will give you free transit access. On State business *only*, you understand."

Lusar had taken the card . . . and had used it eight hours later, to his own surprise. The Ministry had allowed him to go home early in view of his special cooperation on a vital matter involving State Security. Lusar had gone straight to bed as soon as he reached his bleak apartment.

His old familiar nightmares had pounced on him, poisoning his sleep, but also ironically providing the answer to the question he'd been unable to articulate. One night in the camp, Brodt had talked about a village, Kondan, where he'd lived briefly over thirty years before. There had been a house with fruit trees in the walled garden. Lusar tossed, half awake. For once, Brodt hadn't said much about a topic, just mentioned it in passing, chiefly because of the fruit trees. Their stomachs shrunken with hunger, shivering with cold, they had talked of fruit trees. Lusar pushed himself upright and groped for his watch. Should he call Mirsen at such a late hour? It was wise to be thoroughly cooperative.

Mirsen wasn't in. Lusar had hesitated when the hollow voice announced it would record a message. A daring notion occurred to Lusar. He hadn't been out of the city for months. Here was a priceless chance to travel—to another country!—at the State's expense. True, it was a satellite country adjacent to his own; the whole journey would take less than a day by monorail. Before he could change his mind, Lusar said, "It is only a minor detail on the . . . Anton case. I will call again tomorrow." He broke the connection.

Lusar was surprised by his action. He was normally a cautious man, but his yearning for relief from his gray routine spurred him to dress hurriedly and present the blue card at the nearest monorail station. Ten minutes' wait, and he was on his way, feeling quite exhilarated by his boldness. Lusar dozed a bit during the trip. The sun was already well risen when his module shunted to a stop at Kondan's terminal.

Lusar asked the first elderly citi-

zen he met to direct him to a house with a walled garden inhabited forty years previously by the eminent State Scientist Brodt. At first, the gnarled farmer feigned deafness, but when Lusar displayed his blue Security card, the farmer's hearing miraculously improved. He even drew a crude map for Lusar on a scrap of paper.

Following the directions, Lusar had reached his goal after an hour's brisk walk. The old man had told him that the house was deserted now, the last owners having died some years before.

Lusar had half expected to find only ruins, if that much, of the house, but its builders had built for permanence. The roof probably leaked when it rained, and several windows were broken; otherwise, Brodt's old residence still looked solid.

Once inside, Lusar had wondered just what he was searching for. Mirsen had been correct, of course—no one could know which disguise Anton would have assumed. He turned to leave, then hesitated. Brodt never said anything without a reason. Perhaps something about this house had stayed in his mind, so that when he constructed Anton's "memory," Brodt could have included facts that might lead Anton here. Lusar began to search.

He had found the sealed box in a room overlooking the weed-choked, walled garden. As he had peered through the streaked window, Lusar had felt a board shift under his weight. Levering the board free had taken some effort, but Lusar was rewarded when his groping fingers closed on the cold, sharp corners of a metal box.

Lusar had carried it to a broken window where the light was brighter. There was no external lock, just a flat, square plate centered on a side panel. Using a wood splinter, Lusar had pressed the plate cautiously, from a safe distance. There was a clicking sound, and the top rose slightly. Lusar had waited for any violent reaction. When nothing further happened, he pried the lid open, having to slit a plastic membrane that fully lined the interior cavity. The only object inside was a tightly rolled strip of paper. Lusar had recognized Brodt's scrawl at once. Excited, he shook the strip loose, scanning for the start of the message.

His first shock was that the message was addressed to him.

"Lusar," it began, "I expect that you will find this message after my death. I have secretly consulted with several doctors. They all assure me that I may suffer a fatal heart seizure at any time. This apparent fact annoys me, for it probably means that I shall not live to see the results of my Project Anton. I regret that I must therefore order your death."

Lusar's hand jerked. He reread

the words, staring at them, hoping he was mistaken. He wasn't. The message continued, supplying Brodt's justification. Brodt insisted that he had no personal animosity toward Lusar, but he knew that Lusar was the only living man who could give State Security any useful ideas on where Brodt might send his last android.

"During these recent years, I have come to loathe the State," Brodt went on. "I had hoped, as a younger man, that I could affect the course of the State's growth, directing it along lines of scientific inquiry that would bring me fame and also improve the lives of the people. I have failed. The State has become a monster, demanding that I create weapons, machines to bring death, not enrich lives. Knowing that to express my views would be suicidal, I planned that my last and most perfect android would perform the service that I had been unable to achieve—to disrupt the highest circles of government, thus giving the people an opportunity to regain control of the country. Anton will be programmed to kill the members of the State Central Committee. Anton will be the perfect assassin. With the capacity to alter its facial contours, Anton literally possesses a thousand faces. In addition, Anton will be programmed to wait for the optimum chance of total success. My plan will not fail. Incidentally, no one will believe you if you try to reveal my plans. I have concealed my true convictions from every other living soul. To the State, I shall remain a scientific hero. Even if they realize that it is my android killing the Committee members, they will assume that its final programming was tragically flawed. Anton does not age or tire. No matter where they hide, no matter how closely they are guarded, the Committee cannot evade Anton forever. Anton can afford to wait.

"You, Lusar, must be Anton's first target for two pressing reasons. First, the slight chance that you might convince someone of my intentions. Your death will be painless, I assure you. I have programmed Anton with great care on this point, so that you will not suffer. I do not believe in religious superstitions concerning life after death, but I do have a personal code of fairness. I therefore hope that you will forgive my actions against you, since you have done nothing to merit execution . . . yet. But I know that they will question you about me, and certain details I have placed in Anton's memory are also known to you, if only in your subconscious memory levels. Thus arises my second reason for having you killed—State Security will learn those details from you, with your approval or without.

"You were never precisely a friend, Lusar, but you were a companion in adversity. You listened to

me when I talked of my hopes for the future. I believe you will understand why you must die. This message, the sole evidence of my plans, has been treated to oxidize to the flare point beginning with the breaking of the box's seal. Farewell. Brodt."

Lusar had read the last words with difficulty, for the paper strip was agitated by his trembling. Before he could study the document further, it abruptly burst into flame. With a cry, Lusar threw it to the floor, but it was consumed before it reached the wooden surface.

Lusar had stood there, numbed, frozen for several minutes. Then he smiled faintly. He couldn't ignore the irony of his position. He had thought that he was seeking a fugitive robot—instead, the robot was seeking him. Pursuer and quarry had exchanged roles. It would have been more amusing if the pursuit was not to end for Lusar with his death.

He had sagged against the windowsill, furiously driving his mind to think of some way out. The realization had come to him, admittedly late, but he had to face it—the coin of his imprisonment with Brodt had two sides. Brodt had talked to him for endless hours, but Lusar had contributed his share of talk in return. If Lusar knew odd scraps of Brodt's past, then so did Brodt know about Lusar's past. What Brodt knew, Lusar had to assume that Anton now knew. There was, for instance, no point in arranging a clever, indirect retreat to that country hostel in the eastern mountains. Anton would know about it.

What wouldn't Anton know? Lusar's thoughts fluttered like dry leaves in an autumn wind. Little hope in that approach—after so long, he couldn't remember for certain what he might not have told Brodt.

Wait—the twelve years since their release from the camp! Brodt couldn't have foreseen his death early enough to have watched Lusar all those years. The brief hope flared for an instant, then shriveled. Brodt knew the Capital, where Lusar had lived during those years. Time was on Brodt's side. Even if Lusar found a safe refuge in the city, he would have to emerge sometime, and Anton would be waiting. Still, that was one possible option. The only other course Lusar could think of was to go somewhere he'd never been before, somewhere that Brodt/Anton would have no reason to link with Lusar.

But there was one aggressive option—find Anton somehow and dispose of the robot before it could kill him. Lusar tried to recall everything he knew about Brodt's androids. What he knew was not encouraging. They were constructed of highly durable materials; the pseudonerve fibers that Brodt had developed were self-regenerating.

Presumably, given time, a robot could repair almost any injury to itself. It was powered by a sealed energy cell effective for years without replacement. Worst of all, it looked and even felt human to the touch. Lusar could expect no warning of its approach.

Lusar had left the house, so deep in thought that he reached the monorail terminal without being aware of the walk. He had debated briefly on which destination he should choose. The State Security card could clear passage for him as far as the transit system existed. Impulsively, he punched in a return route to the Capital. So Brodt had been familiar with the city; Lusar decided to gamble that he might know its streets and alleys even better.

His reverie was interrupted as the module slipped into the cavernous Main Station. Lusar stepped out onto the pavement. People scurried around him. Which of them might be Anton? Lusar suppressed the thought. To adopt that attitude was to invite paranoia . . . to suspect every stranger. It might be rash to go straight to his apartment. Lusar chose a sheltered bench in the nearest People's Park and sat down to think.

How could a single human kill a robot? Fire, Lusar supposed, would be effective, but the robot would have to be confined amid the flames, and with its superhuman strength, that would be a problem. Perhaps one could run over the creature with a heavy transit vehicle . . . but its reflexes were also superfast. It would have to be taken completely off guard, and Lusar suspected that Brodt would have warned Anton of any situation that could seriously threaten its functioning.

Unable to sit still, Lusar rose to wander aimlessly, turning into side streets at random, pausing only for a hasty meal at a dingy Public Food Hall. For all his thinking, Lusar concluded that he probably couldn't stop Anton. He toyed with exotic, desperate plans to lure the robot into contact with a live electrical cable, but dismissed them as hopeful fantasies. At last, tired from his aching head to his swollen feet, Lusar gave up and trudged home.

He locked the door behind him before he was aware that there was a figure sitting quietly in the corner. Lusar's pulse surged. "Who are you?" he demanded, his voice harsh with both fatigue and fear.

"I am Anton," replied the figure, rising smoothly to its feet. "You are Lusar. Brodt told me about you."

Lusar's mind raced. What could he do? He took a deep breath. There was nothing he could do but submit to this monster disguised as a human. "Go ahead," he muttered. "Kill me. I read Brodt's message at the house near Kondan. He said you'd be quick about it. At

least he thought enough of me to promise that."

Lusar defiantly faced the creature. He had to admit, it certainly looked human—like a decent, nondescript working man. Somehow, Lusar had expected some hint of its monstrosity, some glint in its false eye, some metallic ring in its artificial voice.

"I was not instructed to kill you," Anton observed in incongruously pleasant tones. "Brodt did not expect you to read his Kondan message in person. That message was intended for State Security. Brodt concealed five such messages at sites he knew he had once mentioned to you. He relied on you to recall at least one such place, and give that information to State Security. After reading Brodt's message, they will expect you to disappear, and they will seek to guard the members of the State Central Committee. I am programmed to aid you in the former action, but the latter situation Brodt anticipated, depended upon to cause dismay and confusion."

Overwhelmed by relief, Lusar felt his muscles relax. Quite abruptly, he sat on the floor. Anton solicitously helped him into a chair. The android's hands, Lusar noted absently, were as warm and solid as his own.

"We have much work to accomplish together, Lusar," Anton said, almost reproving. "You will have to curb your human weaknesses."

"Work? With you?" Lusar stared at the android. "But Brodt's message implied you were to work alone."

"Brodt left a special message for you—a message of hope. It is this." Anton paused, then resumed, speaking with Brodt's voice, to Lusar's disconcertion.

"My friend—we spent many hours together in that vile camp, sharing our memories of the past, our dreams for the future. I knew that if we were ever freed, you could be depended upon to survive. You were not an outwardly brave man, Lusar, but you knew how to endure. You knew what our country could become. I matched myself against the tyrannous power of the State; perhaps, I might have succeeded had I been granted more time. I must face the conclusion of my efforts. During these last years, as I developed Project Anton, I decided that another effort must be prepared. As the people are the ultimate victims, so must the people become rebuilders of their lives and their country. Help can come from forces within the Government's ranks, but it must also spring from those oppressed. With Anton, you can organize a fellowship to undermine the State. It will take time—lives must not be risked in vain, premature schemes. Anton knows my plans. You know the people. You know how to sway them with false words; I believe that you can also inspire the people

with the truth. There is a reasonable chance for this approach to succeed. Trust Anton—go with him to a safe place. Teach him those aspects of humanity which I had no time to impart."

Brodt thought of Anton as a person, Lusar realized suddenly. Earlier references to the android as "it" had changed to "him," as if Brodt were speaking of a fellow human being. Lusar curbed his own negative feelings toward robots, and listened to Brodt's final words.

"May you secure peace and freedom for our people. My thoughts will be with you, in Anton's memory, so I do not wish you farewell, but Godspeed."

The android stopped, then resumed in its own voice. "We must leave this place soon. It will be best if there is evidence of your presumed death."

Lusar stood up. If Brodt could treat his artificial contraption as a thinking creature, then Lusar could make the same adjustment. What was a human, after all, but an organic version of a machine, ingesting food to supply energy. As for the matter of a soul, Lusar suspected that if it were possible for such a quality to be quantified, Brodt would have included it in his masterpiece—or expected Lusar to provide what electronics could not. He glanced around the cheerless room, then turned back to face the android. "I won't mind leaving here. It's never felt like a home to me. I won't have much to carry with us."

Anton nodded. "Humans form emotional attachments to inanimate objects. Such behavior seems irrational to me. Perhaps you can explain when we have time to discuss such things. First, we must achieve your disappearance."

Lusar smiled. "I believe we can get along well together. It can be comforting to have a robot on one's side."

"Android," Anton corrected, dispassionately tumbling the sparse furniture to suggest the aftermath of a violent struggle.

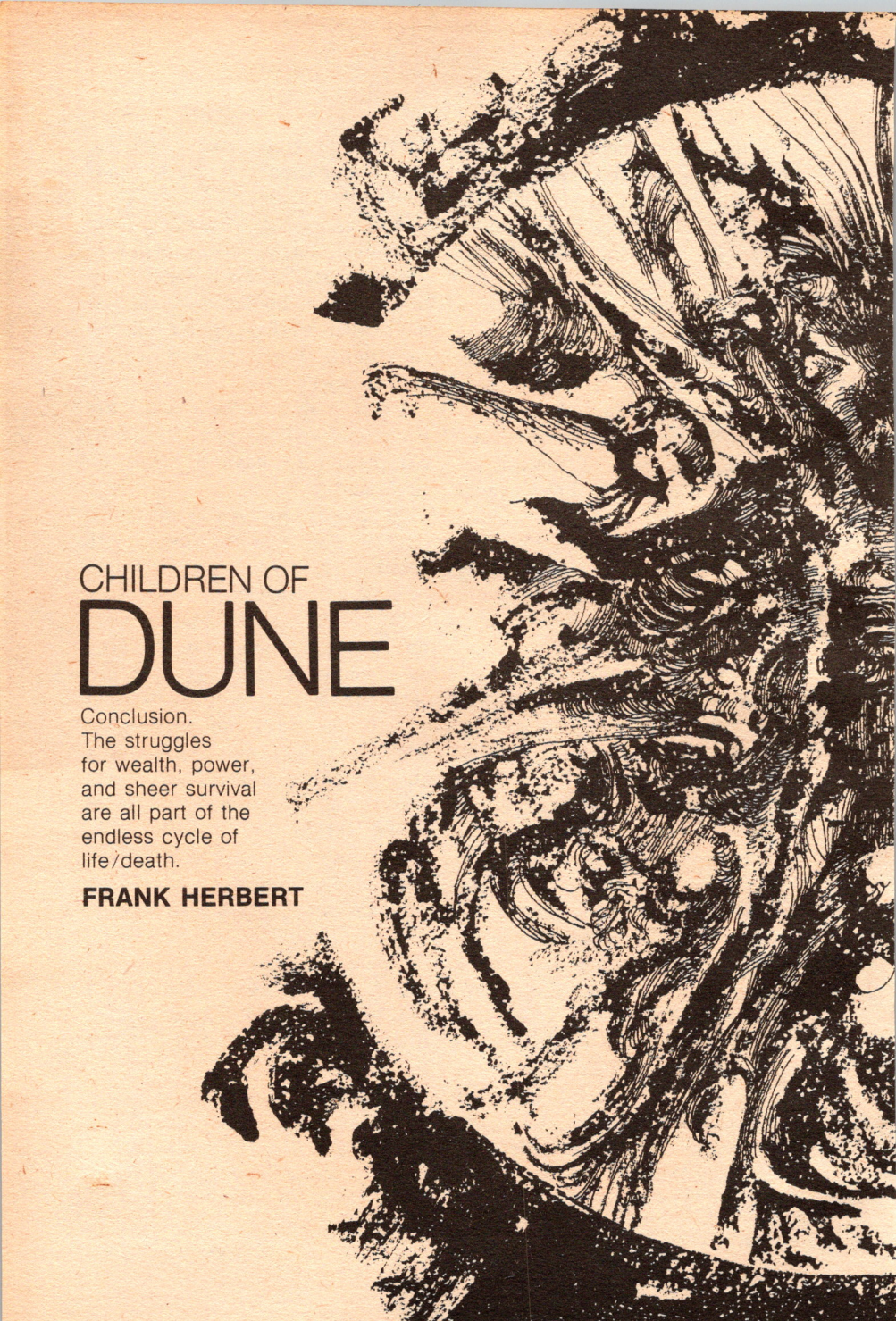
"If we're careful," Lusar went on, "we can elude State Security for months, even years. We can cause all manner of disruptions. I . . . Brodt and I can advise you. We'll give them nightmares, for a change! The feared will learn what it is to fear. You can do things no man could do. They'll have to face the question I faced—how do you kill a . . . an android?"

"I am not totally indestructible," cautioned Anton.

"If we're careful, you are." Lusar rolled up his sleeve. "I'm sure I can spare some blood for authenticity's sake. Where shall I bleed for the best effect?"

"The effect will be on humans," said Anton. "You must judge."

"For the time being, perhaps," Lusar admitted, "but you'll learn. You'll learn." ■



CHILDREN OF DUNE

Conclusion.
The struggles
for wealth, power,
and sheer survival
are all part of the
endless cycle of
life/death.

FRANK HERBERT

JOHN SCHOENHERR

SYNOPSIS

DUNE (Arrakis) is the setting, a planet once almost totally desert but now undergoing Ecological Transformation. This Transformation was ordered by Paul-Muad'Dib, the Atreides Duke who led Dune's Fremen to victory over the Sardaukar legions of the Corrinos. In that victory, Muad'Dib wrested an interplanetary empire from Family Corrino and married a Corrino princess named Irulan but chose a Fremen, Chani, as his mate. With Chani dead in the birth of their twins (Leto and Ghanima), with his eyes destroyed by a stone-burner, Muad'Dib wandered into the desert and was presumed dead. His widowed mother, Lady Jessica, fled back to her family's planetary fiefdom of Caladan with a trusted aide, Gurney Halleck. Her daughter, Alia, advised by Irulan, was left on Dune as Regent for the twins. Alia married Duncan Idaho, an Atreides retainer who gave his life saving Muad'Dib and Jessica, then was restored to life in regeneration tanks by the Tleilaxu, who made a mentat human computer of him and gave him mysterious metal eyes.

Now, the Ecological Transformation threatens to destroy the great worm-serpents, Shai Hulud, essential in production of the geriatric spice, melange, which is a Dune monopoly and primary source of Atreides power. While it imparts long life, melange is addictive. It is required by the Bene Gesserit, the Sisterhood which trained Jessica and bred her to an Atreides Duke as part of a millennia-long design to produce a kwisatz haderach, *a male who transcends the powers of Bene Gesserit Reverend Mothers. Muad'Dib was believed to be that male. Melange gave him true ability to read the futures and his twins now carry those precious genes of the Sisterhood's breeding program.*

The shadowy figure of Muad'Dib, the Fremen Messiah, still haunts Dune. Many believe The Preacher, a blind mystic who roams the planet speaking heresy against Alia's politico-religious rule, is really Muad'Dib. Alia, fearing this mystic, secretly orders his arrest, but The Preacher eludes her spies.

Much turns on the fate of Dune's melange. Without it, the Spacing Guild's navigators cannot achieve the limited prescience with which they find safe translight pathways through the void.

And it was the spice combined with their unique genetic inheritance which made of Alia, Leto and Ghanima "pre-born." This is the label for those awakened in the womb and possessing every memory of every ancestor. The Sisterhood fears this as Abomination. *Bene Gesserit records contain many accounts of pre-born possessed by malignant ancestors. This has happened to Alia who is ruled by the persona of the late Baron Harkonnen, an ancestor of nasty habits and abiding hatred for the Atreides. Leto and Ghanima*

fear similar possession which they suspect may be precipitated by overdoses of spice.

At last, as a disguised Alia watches in a crowd outside her Temple, The Preacher reveals to her alone that he is her brother, Paul-Muad'Dib, and then he escapes.

The Lady Jessica, having returned from Caladan to settle the question of whether her grandchildren are Abomination, sends Halleck to test Leto. Halleck heads for a mysterious desert stronghold called Jacurutu. Jessica clashes with Alia and escapes assassination. An abortive revolution between desert Fremen and urban Fremen settles into a delicate truce. Alia orders Idaho to abduct Jessica and make it appear a Corrino plot. Leto tells Jessica of the abduction plot and orders her to submit to it, saying she'll find "an interesting student." Idaho, saying he does The Preacher's bidding, abducts Jessica and turns her over to the Corrinos. Jessica agrees to teach the Bene Gesserit knowledge to Prince Farad'n, the Corrino heir, a young man who secretly emulates Paul-Muad'Dib. Jessica's price is banishment for Farad'n's mother, Wensicia, who is Irulan's sister. Disgusted with the way his mother trained Laza Tigers to assassinate the twins, Farad'n banishes her but keeps her aide, the Bashar Tyekanik, as adviser. Jessica, beginning with control of image-reality, makes a Bene Gesserit of Farad'n, leading him to realize that "every civilization depends not upon law but upon the quality of the individuals it produces." Jessica hopes knowledge of the twins' own plans imparted by Ghanima may yet save them.

Idaho formally withdraws from Atreides service, telling Jessica that many on Dune curse the Atreides. He returns to Dune, aware that Alia is Abomination, and that she has a lover, Javid. Idaho finds Irulan and Ghanima under Stilgar's guardianship at Sietch Tabr, and with them—ostensibly representing Alia—is Javid, secretly a minion of the outcasts from Jacurutu.

Previously, the twins have killed the assassination tigers, but Ghanima was wounded. Self-hypnotized to protect their secret from Truthsayers, Ghanima returned to Tabr believing Leto died saving her. Only two words, Secher Nbiw *(Golden Path) in an ancient tongue known to the twins through their ancestral memories, can break Ghanima from her hypnotic belief.*

Alia persuades Ghanima to accept bethrothal to Farad'n. Alia knows that Ghanima blames the Corrinos for Leto's death and will kill Farad'n at the first opportunity. This is expected to create turmoil out of which Alia can drop her role of Regent and grasp the mantle of her brother with its ultimate power over the Empire.

Leto goes into the desert alone, following his vision of a Golden Path in which his skin will not be his own, but will be like armor im-

parting to him the strength of thousands. Leto seeks Jacurutu—also known as Fondak. It is peopled by Fremen outcasts, descendants of a tribe of water-stealers which the Fremen long ago tried to wipe out. Leto is captured at Jacurutu. Among his captors are Gurney Halleck and Javid's father, Namri, who wants Leto dead. Halleck believes he's testing Leto to prove the boy is not Abomination. Under Halleck's orders, a young woman named Sabiha feeds dangerous overdoses of melange to Leto. The boy fears this will precipitate his own possession by a malignant ancestor, but the spice trance produces another and deeper vision of the Golden Path. He has a mass experience of his ancestors dominated by one of them, Harum, whose character is not revealed. Leto realizes in the trance that he must bring an act of ultimate self-examination to humankind, that humans are a form of colony organism which periodically must submit to oppressive social order.

Weak from spice trance, Leto escapes into the desert, but Namri gloats that Leto's stillsuit has been sabotaged, that the boy will die without water in an approaching coriolis storm.

Leto, knowing he must cut the threads of other visions, goes seeking The Preacher, revealed to him in the trance as his father. Through knowledge from his ancestral memories, Leto survives the storm and goes to Shuloch Sietch, the real core of those who escaped the Jacurutu massacre. There, Leto overcomes Muriz, father of Muad'Dib's guide. Leto forces Muriz to accept him into Shuloch's "spirit river," warning that the end of all sandworms and, thus, of melange, is near. Having cut himself loose in a visionless future within this "Land of Terror," Leto sets for himself the ultimate tasks: discredit his father and destroy Alia's caliphate, substituting an oppressive time of peace. All the while, Leto must keep at bay those ravening internal hunters of his soul who could change him into Abomination.

Part Four

The future of prescience cannot always be locked into the rules of the past. The threads of existence tangle according to many unknown laws. Prescient future insists on its own rules. it will not conform to the ordering of the Zensunni nor to the ordering of science. Prescience builds a relative integrity. It demands the work of this instant, always warning that you cannot weave every thread into the fabric of the past. —Kalima:

The Words of Muad'Dib

The Shuloch Commentary

Muriz brought the ornithopter in over Shuloch with a practiced ease. Leto, seated beside him, felt the armed presence of Behaleth behind them. Everything went on trust now and the narrow thread of his vision to which he clung. If that failed, *Allahu akbahr.* Sometimes,

one had to submit to a greater order.

The butte of Shuloch was impressive in this desert. Its unmarked presence here spoke of many bribes and many deaths, of many friends in high places. Leto could see at Shuloch's heart a cliff-walled pan with interfringing blind canyons leading down into it. A thick growth of shadescale and salt bushes lined the lower edges of these canyons with an inner ring of fan palms, indicating the water riches of this place. Crude buildings of greenbush and spice fiber had been built out from the fan palms. The buildings were green buttons scattered on the sand. There would live the cast out of the Cast Out, those who could go no lower except into death.

Muriz landed in the pan near the base of one of the canyons. A single structure stood on the sand directly ahead of the 'thopter: a thatch of desert vines and bejato leaves, all lined with heat-fused spice fabric. It was the living replica of the first crude stilltents and it spoke of degradation for some who lived in Shuloch. Leto knew the place would leak moisture and would be full of nightbiters from the nearby growth. So this was how his father lived. And poor Sabiha. Here would be her punishment.

At Muriz' order, Leto let himself out of the 'thopter, jumped down to the sand and strode toward the hut. He could see many people working farther toward the canyon among the palms. They looked tattered and poor, and the fact that they barely glanced at him or at the 'thopter said much of the oppression here. Leto could see the rock lip of a qanat beyond the workers and there was no mistaking the sense of moisture in this air: open water. Passing the hut, Leto saw it was as crude as he'd expected. He pressed on to the qanat, peered down and saw the swirl of predator fish in the dark flow. The workers, avoiding his eyes, went on with clearing sand away from the line of rock openings.

Muriz came up behind Leto, said: "You stand on the boundary between fish and worm. Each of these canyons has its worm. This qanat has been opened and we will remove the fish presently to attract sandtrout."

"Of course," Leto said. "Holding pens. You sell sandtrout and worms off-planet."

"It was Muad'Dib's suggestion!"

"I know. But none of your worms or sandtrout survive for long away from Dune."

"Not yet," Muriz said. "But someday . . ."

"Not in ten thousand years," Leto said. And he turned to watch the turmoil on Muriz' face. Questions flowed there like the water in the qanat. Could this son of Muad'Dib really read the future? Some still believed Muad'Dib had

done it, but . . . How could a thing such as this be judged?

Presently, Muriz turned away, led them back to the hut. He opened the crude doorseal, motioned for Leto to enter. There was a spice oil lamp burning against the far wall and a small figure squatted beneath it, back to the door. The burning oil gave off a heavy fragrance of cinnamon.

"They've sent down a new captive to care for Muad'Dib's *sietch,*" Muriz sneered. "If she serves well, she may keep her water for a time." He confronted Leto. "Some think it evil to take such water. Those lace-shirt Fremen who make rubbish heaps in their new towns! Rubbish heaps! When has Dune ever before seen rubbish heaps? When we get such as this one"—he gestured toward the figure by the lamp—"they're usually half wild with fear, lost to their own kind and never accepted by we true Fremen. Do you understand me, Leto-Batigh?"

"I understand you." The crouching figure had not moved.

"You speak of leading us," Muriz said. "Fremen are led by men who've been blooded. What could you lead us in?"

"Kralizec," Leto said, keeping his attention on the crouched figure.

Muriz glared at him, brows contracted over his indigo eyes. Kralizec? That wasn't merely war or revolution; that was the Typhoon-Struggle. It was a word from the furthermost Fremen legends: the battle at the end of the universe. Kralizec?

The tall Fremen swallowed convulsively. This sprat was as unpredictable as a city dandy! Muriz turned to the squatting figure. "Woman! Liban wahid," he commanded. *"Bring us the spice drink."*

She hesitated.

"Do as he says, Sabiha," Leto said.

She jumped to her feet, whirling. She stared at him, unable to take her gaze from his face.

"You know this one?" Muriz asked.

"She is Namri's niece. She offended Jacurutu and they have sent her to you."

"Namri? But . . ."

"Liban wahid," Leto said.

She rushed past them, tore herself through the doorseal and they heard the sound of her running feet.

"She will not go far," Muriz said. He touched a finger to the side of his nose. "A kin of Namri, eh. Interesting. What did she do to offend?"

"She allowed me to escape." Leto turned then and followed Sabiha. He found her standing at the edge of the qanat. Leto moved up beside her and looked down at the water. There were birds in the nearby fan palms and he heard their calls, their wings. The workers made scraping sounds as they moved sand. Still, he did as Sabiha

did, looking down, deep into the water and its reflections. The corners of his eyes saw blue parakeets in the palm fronds. One flew across the qanat and he saw it reflected in a silver swirl of fish, all run together as though birds and predators swam in the same firmament.

Sabiha cleared her throat.

"You hate me," Leto said.

"You shamed me. You shamed me before my people. They held an Isnad and sent me here to lose my water. All because of you!"

Muriz laughed from close behind them. "And now you see, Leto-Batigh, that our Spirit River has many tributaries."

"But my water flows in your veins," Leto said, turning. "That is no tributary. Sabiha is the fate of my vision and I follow her. I fled across the desert to find my future here in Shuloch."

"You and . . ." He pointed at Sabiha, threw his head back in laughter.

"It will not be as either of you might believe," Leto said. "Remember this, Muriz. I have found the footprints of my worm." He felt tears swimming in his eyes then.

"He gives water to the dead," Sabiha whispered.

Even Muriz stared at him in awe. Fremen never cried unless it was the most profound gift of the soul. Almost embarrassed, Muriz closed his mouth-seal, pulled his djeballa hood low over his brows.

Leto peered beyond the man, said: "Here in Shuloch, they still pray for dew at the desert's edge. Go, Muriz, and pray for Kralizec. I promise you it will come."

Fremen speech implies great concision, a precise sense of expression. It is immersed in the illusion of absolutes. Its assumptions are a fertile ground for absolutist religions. Furthermore, Fremen are fond of moralizing. They confront the terrifying instability of all things with institutionalized statements. They say: "We know there is no summa of all attainable knowledge; that is the preserve of God. But whatever men can learn men can contain." Out of this knife-edged approach to the universe, they carve a fantastic belief in signs and omens and in their own destiny. This is an origin of their Kralizec legend: the war at the end of the universe.

—Bene Gesserit Private Reports
Folio 800881

"They have him securely in a safe place," Namri said, smiling across the square stone room at Gurney Halleck. "You may report this to your friends."

"Where is this safe place?" Halleck asked. He didn't like Namri's tone, felt constrained by Jessica's orders. Damn the witch! Her explanations made no sense, except the warning about what could happen if Leto failed to master his terrible memories.

"It's a safe place," Namri said. "That's all I'm permitted to tell you."

"How do you know this?"

"I've had a distrans. Sabiha is with him."

"Sabiha! She'll just let him . . ."

"Not this time."

"Are you going to kill him?"

"That's no longer up to me."

Halleck grimaced. *Distrans.* What was the range of those damned cave bats. He'd often seen them flitting across the desert with hidden messages imprinted upon their squeaking calls. But how far would they go on this hell-hole planet?

"I must see him for myself," Halleck said.

"That's not permitted."

Halleck took a deep breath to quiet himself. He had spent two days and two nights waiting for search reports. Now, it was another morning and he felt his role dissolving around him, leaving him naked. He had never liked command anyway. Command always waited while others did the interesting and dangerous things.

"Why isn't it permitted?" he asked. The smugglers who'd arranged this safe-sietch had left too many questions unanswered and he wanted no more of the same from Namri.

"Some believe you've seen too much when you saw this sietch," Namri said.

Halleck heard the menace, relaxed into the easy stance of the trained fighter, hand near but not on his knife. He longed for a shield, but that had been ruled out by its effect on the worms, its short life in the presence of storm-generated static charges.

"This secrecy isn't part of our agreement," Halleck said.

"If I'd killed him, would that have been part of our agreement?"

Again, Halleck felt the jockeying of unseen forces about which the Lady Jessica hadn't warned him. This damned plan of hers! Maybe it was right not to trust the Bene Gesserit. Immediately, he felt disloyal. She'd explained the problem, and he'd come into her plan with the expectation that it, like all plans, would need adjustments later. This wasn't *any* Bene Gesserit; this was Jessica of the Atreides who'd never been other than friend and supporter to him. Without her, he knew he'd have been cast adrift in a universe more dangerous than the one he now inhabited.

"You can't answer my question," Namri said.

"You were to kill him only if he showed himself to be . . . possessed," Halleck said. "Abomination."

Namri put his fist beside his right ear. "Your Lady knew we had tests for such. Wise of her to leave that judgment in my hands."

Halleck compressed his lips in frustration.

"You heard the Reverend Mother's words to me," Namri

said. "We Fremen understand such women, but you off-worlders never understand them. Fremen women often send their sons to death."

Halleck spoke past stiff lips. "Are you telling me you've killed him?"

"He lives. He is in a safe place. He'll continue to receive the spice."

"But I'm to escort him back to his grandmother if he survives," Halleck said.

Namri merely shrugged.

Halleck understood that this was all the answer he'd get. Damn! He couldn't go back to Jessica with such unanswered questions! He shook his head.

"Why question what you cannot change?" Namri asked. "You're being well paid."

Halleck scowled at the man. Fremen! They believed all foreigners were influenced primarily by money. But Namri was speaking more than Fremen prejudice. Other forces were at work here and that was obvious to one who'd been trained in observation by a Bene Gesserit. This whole thing had the smell of a feint within a feint within a feint . . .

Shifting to the insultingly familiar form, Halleck said: "The Lady Jessica will be wrathful. She could send cohorts against . . ."

"Zanadiq!" Namri cursed. "You office messenger! You stand outside the *mohalata!* I take pleasure in possessing your water for the Noble People!"

Halleck rested a hand on his knife, readied his left sleeve where he'd prepared a small surprise for attackers. "I see no water spilled here," he said. "Perhaps you're blinded by your pride."

"You live because I wished you to learn before dying that your Lady Jessica will not send cohorts against anyone. You are not to be lured quietly into the Huanui, off-world scum. I am of the Noble People and you . . ."

"And I'm just a servant of the Atreides," Halleck said, voice mild. "We're the scum who lifted the Harkonnen yoke from your smelly neck."

Namri showed white teeth in a grimace. "Your Lady is prisoner on Salusa Secundus. The notes you thought were from her came from her daughter!"

By extreme effort, Halleck managed to keep his voice even. "No matter. Alia will . . ."

Namri drew his crysknife. "What do you know of the Womb of Heaven? I am her servant, you male whore. I do her bidding when I take your water!" And he lunged across the room with foolhardy directness.

Halleck, not allowing himself to be tricked by such seeming clumsiness, flicked up the left arm of his robe, releasing the extra length of heavy fabric he'd had sewn there, letting that take Namri's knife. In the same movement, Halleck swept the folds of cloth over Namri's head, came in under and through

the cloth with his own knife aimed directly for the face. He felt the point bite home as Namri's body hit him with a hard surface of metal armor beneath the robe. The Fremen emitted one outraged squeal, jerked backward and fell. He lay there, blood gushing from his mouth as his eyes glared at Halleck, then slowly dulled.

Halleck blew air through his lips. How could that fool Namri have expected anyone to miss the presence of armor beneath a robe? Halleck addressed the corpse as he recovered the trick sleeve, wiped his knife and sheathed it. "How did you think we Atreides *servants* were trained, fool?"

He took a deep breath, thinking: *Well, now. Whose feint am I?* There'd been the ring of truth in Namri's words. Jessica a prisoner of the Corrinos and Alia working her own devious schemes. Jessica herself had warned of many contingencies with Alia as enemy, but had not predicted herself as prisoner. He had his orders to obey, though. First, there was the necessity of getting away from this place. Luckily, one robed Fremen looked much like another. He rolled Namri's body into a corner, threw cushions over it, moved a rug to cover the blood. When it was done, Halleck adjusted the nose and mouth tubes of his stillsuit, brought up the mask as one would in preparing for the desert, pulled the hood of his robe foreward and went out into the long passage.

The innocent move without care, he thought, setting his pace at an easy saunter. He felt curiously free, as though he'd moved out of danger, not into it.

I never did like her plan for the boy, he thought. *And I'll tell her so if I see her. If.* Because if Namri spoke the truth, the most dangerous alternate plan went into effect. Alia wouldn't let him live long if she caught him, but there was always Stilgar—a good Fremen with a good Fremen's superstitions.

Jessica had explained it: "There's a very thin layer of civilized behavior over Stilgar's original nature. And here's how you take that layer off him . . ."

The spirit of Muad'Dib is more than words, more than the letter of the Law which arises in his name. Muad'Dib must always be that inner outrage against the complacently powerful, against the charlatans and the dogmatic fanatics. It is that inner outrage which must have its say because Muad'Dib taught us one thing above all others: that humans can endure only in a fraternity of social justice.

—The Fedaykin Compact

Leto sat with his back against the wall of the hut, his attention on Sabiha, watching the threads of his vision unroll. She had prepared the coffee and set it aside. Now, she squatted across from him, stirring

his evening meal. It was a gruel redolent with melange. Her hands moved quickly with the ladle and liquid indigo stained the sides of his bowl. She bent her thin face over the bowl, blending in the concentrate. The crude membrane which made a stilltent of the hut had been patched with lighter material directly behind her and this formed a gray halo against which her shadow danced in the flickering light of the cooking flame and the single lamp.

That lamp intrigued Leto. These people of Shuloch were profligate with spice oil: a lamp, not a glowglobe. They kept slave outcasts within their walls in the fashion told by the most ancient Fremen traditions. Yet, they employed ornithopters and the latest spice harvesters. They were a crude mixture of ancient and modern.

Sabiha pushed the bowl of gruel toward him, extinguished the cooking flame.

Leto ignored the bowl.

"I will be punished if you do not eat this," she said.

He stared at her, thinking: *If I kill her, that'll shatter one vision. If I tell her Muriz' plans, that'll shatter another vision. If I wait here for my father, this vision-thread will become a mighty rope.*

His mind sorted the threads. Some held a sweetness which haunted him. One future with Sabiha carried alluring reality within his prescient awareness. It threatened to block out all others until he followed it out to its ending agonies.

"Why do you stare at me that way?" she asked.

Still he did not answer.

She pushed the bowl closer to him.

Leto tried to swallow in a dry throat. The impulse to kill Sabiha welled in him. He found himself trembling with it. How easy it would be to shatter one vision and let the wildness run free!

"Muriz commands this," she said, touching the bowl.

Yes, Muriz commanded it. Superstition conquered everything. Muriz wanted a vision cast for him to read. He was an ancient savage asking the witchdoctor to throw the ox bones and interpret their sprawl. Muriz had taken his captive's stillsuit "as a simple precaution." There'd been a sly jibe at Namri and Sabiha in that comment. *Only fools let a prisoner escape.*

Muriz had a deep emotional problem, though: the Spirit River. The captive's water flowed in Muriz' veins. Muriz sought a sign that would permit him to hold a threat of death over Leto.

Like father, like son, Leto thought.

"The spice will only give you visions," Sabiha said. The long silences made her uneasy. "I've had visions in the orgy many times. They don't mean anything."

That's it! he thought, his body

locking itself into a stillness which left his skin cold and clammy. The Bene Gesserit training took over his consciousness, a pinpoint illumination which fanned out beyond him to throw the blazoning light of vision upon Sabiha and all of her Cast Out fellows. The ancient Bene Gesserit learning was explicit—

"Languages build up to reflect specializations in a way of life. Each specialization may be recognized by its words, by its assumptions and sentence structures. Look for stoppages. Specializations represent places where life is being stopped, where the movement is dammed up and frozen."

He saw Sabiha then as a vision-maker in her own right, and every other human carried the same power. Yet she was disdainful of her spice-orgy visions. They caused disquiet and, therefore, must be put aside, forgotten deliberately. Her people prayed to Shai Hulud because the worm dominated many of their visions. They prayed for dew at the desert's edge because moisture limited their lives. Yet, they wallowed in spice wealth and lured sandtrout to open qanats. Sabiha fed him prescient visions with a casual callousness, yet within her words he saw the illuminated signals: she depended upon absolutes, sought finite limits, and all because she couldn't handle the rigors of terrible decisions which touched her own flesh. She clung to her one-eyed vision of the universe, englobing and time-freezing as it might be, because the alternatives terrified her.

In contrast, Leto felt the pure movement of himself. He was a membrane collecting infinite dimensions and, because he saw those dimensions, he could make the terrible decisions.

As my father did.

"You must eat this!" Sabiha said, her voice petulant.

Leto saw the whole pattern of the visions now and knew the thread he must follow. *My skin is not my own.* He stood, pulling his robe around him. It felt strange against his flesh with no stillsuit protecting his body. His feet were bare upon the fused spice fabric of the floor, feeling the sand tracked in there.

"What're you doing?" Sabiha demanded.

"The air is bad in here. I'm going outside."

"You can't escape," she said. "Every canyon has its worm. If you go beyond the qanat, the worms will sense you by your moisture. These captive worms are very alert—not like the ones in the desert at all. Besides (how gloating her voice became!) you've no stillsuit."

"Then why do you worry?" he asked, wondering if he might yet provoke a real reaction from her.

"Because you've not eaten."

"And you'll be punished?"

"Yes!"

"But I'm already saturated with spice," he said. "Every moment is a vision." He gestured with a bare foot at the bowl. "Pour that onto the sand. Who'll know?"

"They watch," she whispered.

He shook his head, shedding her from his visions, feeling the new freedom envelop him. No need to kill this poor pawn. She danced to other music, not even knowing the steps, believing that she might yet share the power which lured the hungry pirates of Shuloch and Jacurutu. Leto went to the door-seal, put a hand upon it.

"When Muriz comes," she said, "he'll be very angry with . . ."

"Muriz is a merchant of emptiness," Leto said. "My Aunt has drained him."

She got to her feet. "I'm going out with you."

And he thought: *She remembers how I escaped her. Now, she feels the fragility of her hold upon me. Her visions stir within her.* But she would not listen to those visions. She had but to reflect: How could he outwit a captive worm in its narrow canyon? How could he live in the Tanzerouft without stillsuit or fremkit?

"I must be alone to consult my visions," he said. "You'll remain here."

"Where will you go?"

"To the qanat."

"The sandtrout come out in swarms at night."

"They won't eat me."

"Sometimes, the worm comes down to just beyond the water," she said. "If you cross the qanat . . ." She broke off, trying to edge her words with menace.

"How could I mount a worm without hooks?" he asked, wondering if she still could salvage some bit of her visions.

"Will you eat when you return?" she asked, squatting once more by the bowl, recovering the ladle and stirring the indigo broth.

"Everything in its own time," he said, knowing she'd be unable to detect his delicate use of Voice, the way he insinuated his own desires into her decision-making.

"Muriz will come and see if you've had a vision," she warned.

"I will deal with Muriz in my own way," he said, noting how heavy and slow her movements had become. The pattern of all Fremen led itself naturally into the way he guided her now. Fremen were people of extraordinary energy at sunrise, but a deep and lethargic melancholy often overcame them at nightfall. Already she wanted to sink into sleep and dreams.

Leto let himself out into the night alone.

The sky glittered with stars and he could make out the bulk of surrounding butte against their pattern. He went up under the palms to the qanat.

For a long time Leto squatted at the qanat's edge, listening to the restless hiss of sand within the can-

yon beyond. A small worm by the sound of it; chosen for that reason, no doubt. A small worm would be easier to transport. He thought about the worm's capture: The hunters would dull it with a water mist, using the traditional Fremen method of taking a worm for the orgy/transformation rite. But this worm would not be killed by immersion. This one would go out on a Guild Highliner to some hopeful buyer whose desert probably would be too moist. Few offworlders realized the basic desiccation which the sandtrout had maintained on Arrakis. *Had maintained.* Because even here in the Tanzerouft there would be many times more airborne moisture than any worm had ever before known short of its death in a Fremen cistern.

He heard Sabiha stirring in the hut behind him. She was restless, prodded by her own suppressed visions. He wondered how it would be to live outside a vision with her, sharing each moment just as it came, of itself. The thought attracted him far more strongly than had any spice vision. There was a certain cleanliness about facing an unknown future.

A kiss in the sietch is worth two in the city.

The old Fremen maxim said it all. The traditional sietch had held a recognizable wildness mingled with shyness. There were traces of that shyness in the people of Jacurutu/Shuloch, but only traces. This saddened him by revealing what had been lost.

Slowly, so slowly that the knowledge was fully upon him before he recognized its beginnings, Leto grew aware of the soft rustling from many creatures all around him.

Sandtrout.

Soon it would be time to shift from one vision to another. He felt the movement of sandtrout as a movement within himself. Fremen had lived with the strange creatures for generations, knowing that if you risked a bit of water as bait, you could lure them into reach. Many a Fremen dying of thirst had risked his last few drops of water in this gamble, knowing that the sweet green syrup teased from a sandtrout might yield a small profit in energy. But the sandtrout were mostly the game of children who caught them for the Huanui. And for play.

Leto shuddered at the thought of what that *play* meant to him now.

He felt one of the creatures slither across his bare foot. It hesitated, then went on, attracted by the greater amount of water in the qanat.

For a moment, though, he'd felt the reality of his terrible decision. *The sandtrout glove.* It was the play of children. If one held a sandtrout in the hand, smoothing it over your skin, it formed a living glove. Traces of blood in the skin's capillaries could be sensed by the crea-

tures, but something mingled with the blood's water repelled them. Sooner or later, the glove would slip off into the sand, there to be lifted into a spice-fiber basket. The spice soothed them until they were dumped into the deathstill.

He could hear sandtrout dropping into the qanat, the swirl of predators eating them. Water softened the sandtrout, made it pliable. Children learned this early. A bit of saliva teased out the sweet syrup. Leto listened to the splashing. This was a migration of sandtrout come up to the open water, but they could not contain a flowing qanat patrolled by predator fish.

Still they came; still they splashed.

Leto groped on the sand with his right hand until his fingers encountered the leathery skin of a sandtrout. It was the large one he had expected. The creature didn't try to evade him, but moved eagerly onto his flesh. He explored its outline with his free hand—roughly diamond-shaped. It had no head, no extremities, no eyes, yet it could find water unerringly. With its fellows, it could join body to body, locking one on another by the coarse interlacings of extruded cilia until the whole became one large sack-organism enclosing the water, walling off the *poison* from the giant which the sandtrout would become: Shai Hulud.

The sandtrout squirmed on his hand, elongating, stretching. As it moved, he felt a counterpart elongating and stretching of the vision he had chosen. *This thread, not that one.* He felt the sandtrout becoming thin, covering more and more of his hand. No sandtrout had ever before encountered a hand such as this one, every cell supersaturated with spice. No other human had ever before lived and reasoned in such a condition. Delicately, Leto adjusted his enzyme balance, drawing on the illuminated sureness he'd gained in spice trance. The knowledge from those uncounted lifetimes which blended themselves within him provided the certainty through which he chose the precise adjustments, staving off the death from an overdose which would engulf him if he relaxed his watchfulness for only a heartbeat. And at the same time, he blended himself with the sandtrout, feeding on it, feeding it, learning it. His trance vision provided the template and he followed it precisely.

Leto felt the sandtrout grow thin, spreading itself over more and more of his hand, reaching up his arm. He located another, placed it over the first one. Contact ignited a frenzied squirming in the creatures. Their cilia locked and they became a single membrane which enclosed him to the elbow. The sandtrout adjusted to the living glove of childhood play, but thinner and more sensitive as he lured it into the role of a skin symbiote. He

reached down with the living glove, felt sand, each grain distinct to his senses. This was no longer sandtrout; it was tougher, stronger. And it would grow stronger and stronger . . . His groping hand encountered another sandtrout which whipped itself into union with the first two and adapted itself to the new role. Leathery softness insinuated itself up his arm to his shoulder.

With a terrible singleness of concentration, he maintained the union of this new skin with his body, preventing rejection. No corner of his attention was left to dwell upon the terrifying consequences of what he did here. Only the necessities of his trance vision mattered. Only the Golden Path could come from this ordeal.

Leto shed his robe and lay naked upon the sand, his gloved arm outstretched into the path of migrating sandtrout. He remembered that once he and Ghanima had caught a sandtrout, abraded it against the sand until it contracted into the *child-worm*, a stiff tube, its interior pregnant with the green syrup. One bit gently upon the end and sucked swiftly before the wound was healed, gaining the few drops of sweetness.

They were all over his body now. He could feel the pulse of his blood against the living membrane. One tried to cover his face, but he moved it roughly until it elongated into a thin roll. The thing grew much longer than the *child-worm*, remaining flexible. Leto bit the end of it, tasted a thin stream of sweetness which continued far longer than any Fremen had ever before experienced. He could feel energy from the sweetness flow through him. A curious excitement suffused his body. His spice-saturated blood was not repelling them. He was kept busy for a time rolling the membrane away from his face until he'd built up a stiff ridge circling from jaw to forehead and leaving his ears exposed.

Now, the vision must be tested.

He got to his feet, turned to run back toward the hut and, as he moved, found his feet moving too fast for him to balance. He plunged into the sand, rolled and leaped to his feet. The leap took him two meters off the sand and, when he fell back, trying to walk, he again moved too fast.

Stop! he commanded himself. He fell into the prana-bindu forced relaxation, gathering his senses into the pool of consciousness. This focused the inward ripples of the *constant-now* through which he experienced Time and he allowed the vision-elation to warm him. The membrane worked precisely as the vision had predicted.

My skin is not my own.

But his muscles took some training to live with this amplified movement. When he walked, he fell, rolling. Presently, he sat. In the quiet, the ridge below his jaw tried to become a membrane cov-

ering his mouth. He spat against it and bit, tasting the sweet syrup. It rolled downward to the pressure of his hand.

Enough time had passed to form the union with his body. Leto stretched flat and turned onto his face. He began to crawl, rasping the membrane against the sand. He could feel the sand distinctly, but nothing abraded his own flesh. With only a few swimming movements, he traversed fifty meters of sand. The physical reaction was a friction-induced warming sensation.

The membrane no longer tried to cover his nose and mouth, but now he faced the second major step onto his Golden Path. His exertions had taken him beyond the qanat into the canyon where the trapped worm stayed. He heard it hissing toward him, attracted by his movements.

Leto leaped to his feet, intending to stand and wait, but the amplified movement sent him sprawling twenty meters farther into the canyon. Controlling his reactions with terrible effort, he sat back onto his haunches, straightened. Now, the sand began to swell directly in front of him, rising up in a monstrous starlit curve. Sand opened only two body lengths from him. Crystal teeth flashed in the dim light. He saw the yawning mouth-cavern with, far back, the ambient movement of dim flame. The overpowering redolence of the spice swept over him. But the worm had stopped. It remained in front of him as first moon lifted over the butte. The light reflected off the worm's teeth, outlining the faerie glow of chemical fires deep within the creature.

So deep was the inbred Fremen fear, that Leto found himself torn by a desire to flee. But his vision held him motionless, fascinated by this prolonged moment. No one had ever before stood this close to the mouth of a living worm and survived. Gently, Leto moved his right foot, met a sand ridge and, reacting too quickly, was propelled toward the worm's mouth. He came to a stop on his knees.

Still, the worm did not move.

It sensed only the sandtrout and would not attack the deep-sand vector of its own kind. The worm would attack another worm in its territory and would come to exposed spice. Only a water barrier stopped it and sandtrout, encapsulating water, were a water barrier.

Experimentally, Leto moved a hand toward that awesome mouth. The worm drew back a full meter.

Confidence restored, Leto turned away from the worm and began teaching his muscles to live within this membrane. Cautiously, he walked back toward the qanat. The worm remained motionless behind him. When Leto was beyond the water barrier, he leaped with joy, went sailing ten meters across the sand, sprawled, rolled, laughed.

Light flared on the sand as the

hut's doorseal was breached. Sabiha stood outlined in the yellow and purple glow of the lamp, staring out at him.

Laughing, Leto ran back across the qanat, stopped in front of the worm, turned and faced her with his arms outstretched.

"Look!" he called. "The worm does my bidding!"

As she stood in frozen shock, he whirled, went racing around the worm and into the canyon. Gaining experience with his new skin, he found he could run with only the lightest flexing of muscles. It was almost effortless. When he put effort into running, he raced over the sand with the wind burning the exposed circle of his face. At the canyon's dead end, instead of stopping, he leaped up a full fifteen meters, clawed at the cliff, scrabbled, climbing like an insect, and came out on the crest above the Tanzerouft.

The desert stretched before him, a vast silvery undulance in the moonlight.

Leto's manic exhilaration receded.

He squatted, sensing how light his body felt beneath the membrane. Exertion had produced a slick film of perspiration which a stillsuit would have absorbed and routed into the transfer tissue which removed the salts. Even as he relaxed, the film disappeared now, absorbed by the sandtrout faster than a stillsuit could have done it. Thoughtfully, Leto rolled a length of membrane beneath his lips, pulled it into his mouth and drank the sweetness.

The membrane was not masking his mouth, though. Fremen-wise, he sensed his body's moisture being wasted with every breath. Leto brought a section of the membrane over his mouth, rolled it back when it tried to seal his nostrils, kept at this until the rolled barrier remained in place. In the desert way, he fell into the automatic breathing pattern: in through his nose, out through his mouth. The membrane over his mouth protruded in a small bubble, but remained in place. No moisture collected on his lips and his nostrils remained open. The adaptation proceeded, then.

A 'thopter flew between Leto and the moon, banked and came in for a spread-wing landing on the butte perhaps a hundred meters to his left. Leto glanced at it, turned and looked back the way he had come up the canyon. Many lights could be seen down there beyond the qanat, a stirring of a multitude. He heard faint outcries, sensed hysteria in the sounds. Two men approached him from the 'thopter. Moonlight glinted on their weapons.

The test-ashad, Leto thought and it was a sad thought. Here was the great leap onto the Golden Path. He had put on the living, self-repairing stillsuit of a sandtrout membrane, a thing of unmea-

surable value on Arrakis . . . until you understood the price. *When I am no longer human, the legends about this night will grow and magnify it beyond anything recognizable by the participants. But it will become truth, that legend.*

He peered down from the butte, estimated the desert floor lay two hundred meters below. The moon picked out ledges and cracks on the steep face, but no connected pathway. Leto stood, inhaled a deep breath, glanced back at the approaching men, then stepped to the cliff's edge and launched himself into space. Some thirty meters down, his flexed legs encountered a narrow ledge. Membrane-amplified muscles absorbed the shock and rebounded in a leap sideways to another ledge where he caught a narrow outcropping with his hands, dropped twenty meters, leaped to another handhold and once more went down, bouncing, leaping, grasping tiny ledges. He took the final forty meters in one jump, landing in a bent-knee roll which sent him plunging down the slip-face of a dune in a shower of sand and dust. At the bottom, he scrambled to his feet, launched himself to the next dune crest in one jump. He could hear hoarse shouts from atop the cliff, but ignored them to concentrate on the leaping strides from dune top to dune top.

As he grew more accustomed to amplified muscles, he found a sensuous joy that he had not anticipated in this distance-gulping movement. It was a ballet on the desert, defiance of the Tanzerouft which no other human had ever experienced.

When he judged that the ornithopter's occupants had overcome their shock enough to once more mount pursuit, he dove for the moon-shadowed face of a dune, burrowed into it. The sand was like heavy liquid to his new strength, but the temperature mounted dangerously when he moved too fast. He broke free on the far face of the dune, found that the membrane had covered his nostrils. He removed it, sensed the new skin pulsing over his body in its labor to absorb his perspiration.

Leto fashioned a tube at his mouth, drank the syrup while he peered upward at the starry sky. He estimated he had come fifteen kilometers from Shuloch. Presently, a 'thopter drew its pattern across the stars, a great bird shape followed by another and another. He heard the soft swishing of their wings, the susurration of their muted jets.

Sipping at the living tube, he waited. First moon passed through its track, second moon.

An hour before dawn Leto crept out and up to the dune crest, examined the sky. No hunters. Now, he knew himself to be embarked upon a path of no return. Ahead lay the trap in time and space

which had been prepared as an unforgettable lesson for himself and all of mankind.

Leto turned northeast and loped another fifty kilometers before burrowing into the sand for the day, leaving only a tiny hole to the surface which he kept open with a sandtrout tube. The membrane was learning how to live with him as he learned how to live with it. He tried not to think of the other things it was doing to his flesh.

Tomorrow, I'll raid Gara Rulen, he thought. *I'll smash their qanat and loose its water into the sand. Then I'll go on to Windsack, Old Gap and Harg. In a month, the Ecological Transformation will have been set back a full generation. That'll give us space to develop the new timetable.*

And the wildness of the rebel tribes would be blamed, of course. Some would revive memories of Jacurutu. Alia would have her hands full. As for Ghanima . . . Silently to himself, Leto mouthed the words which would restore her memory. Time for that later . . . if they survived this terrible mixing of threads.

The Golden Path lured him out there on the desert, almost a physical thing which he could see with his open eyes. And he thought how it was: As animals must move across the land, their existence dependent upon that movement, the soul of humankind, blocked for eons, needed a track upon which it could move.

He thought of his father then, telling himself: "Soon, we'll dispute as man to man and only one vision will emerge."

Limits of survival are set by climate, those long drifts of change which a generation may fail to notice. And it is the extremes of climate which set the pattern. Lonely, finite humans may observe climatic provinces, fluctuations of annual weather and, occasionally, may observe such things as "This is a colder year than I've ever known." Such things are sensible. But humans are seldom alerted to the shifting average through a great span of years. And it is precisely in this alerting that humans learn how to survive on any planet. They must learn climate.

—Arrakis, the Transformation
After Harq al-Ada

Alia sat cross-legged on her bed trying to compose herself by reciting the Litany Against Fear, but chuckling derision echoed in her skull to block every effort. She could hear the voice; it controlled her ears, her mind.

"What nonsense is this? What have you to fear?"

The muscles of her calves twitched as her feet tried to make running motions. There was nowhere to run.

She wore only a golden gown of the sheerest Palian silk and it re-

vealed the plumpness which had begun to bulge her body. The Hour of Assassins had just passed, dawn was near. Reports covering the past three months lay before her on the red coverlet. She could hear the humming of the air-conditioner and a small breeze stirred the labels on the shigawire spools.

Aides had awakened her fearfully two hours earlier, bringing news of the latest outrage, and Alia had called for the report spools, seeking an intelligible pattern.

She gave up on the Litany.

These attacks had to be the work of rebels. Obviously. More and more of them turned against Muad'Dib's religion.

"And what's wrong with that?" the derisive voice asked within her.

Alia shook her head savagely. Namri had failed her. She'd been a fool to trust such a dangerous double instrument. Her aides whispered that Stilgar was to blame, that he was a secret rebel. And what had become of Halleck? Gone to ground among his smuggler friends? Possibly.

She picked up one of the report spools. *And Muriz!* The man was hysterical. That was the only possible explanation. Otherwise, she'd have to believe in miracles. No human, let alone a child (even a child such as Leto) could leap from the butte at Shuloch and survive to flee across the desert in leaps that took him from dune crest to dune crest.

Alia felt the coldness of the shigawire under her hand.

Where was Leto, then? Ghanima refused to believe him other than dead. A Truthsayer had confirmed her story: Leto slain by a Laza Tiger. Then who was the child reported by Namri and Muriz?

She shuddered.

Forty qanats had been breached, their waters loosed into the sand. The loyal Fremen and even the rebels, superstitious louts, all! Her reports were flooded with stories of mysterious occurrences. Sandtrout leaped into qanats and shattered to become hosts of small replicas. Worms deliberately drowned themselves. Blood dripped from second moon and fell to Arrakis where it stirred up great storms. And the storm frequency *was* increasing!

She thought of Duncan incommunicado at Tabr, fretting under the restraints she'd exacted from Stilgar. He and Irulan talked of little else than the *real* meaning behind these omens. Fools! Even her spies betrayed the influence of these outrageous stories!

Why did Ghanima insist on her story of the Laza tiger?

Alia sighed. Only one of the reports on the shigawire spools reassured her. Farad'n had sent a contingent of his household guard "to help you in your troubles and to prepare the way for the official rite of betrothal." Alia smiled to herself and shared the chuckle which rumbled in her skull. That plan, at

least, remained intact. Logical explanations would be found to explain away all of this other superstitious nonsense.

Meanwhile, she'd use Farad'n's men to help close down Shuloch and to arrest the known dissidents, especially among the naibs. She debated moving against Stilgar, but the inner voice cautioned against this.

"Not yet."

"My mother and the Sisterhood still have some plan of their own," Alia whispered. "Why is she training Farad'n?"

"Perhaps he excites her," the Old Baron said.

"Not that cold one."

"You're not thinking of asking Farad'n to return her?"

"I know the dangers in that!"

"Good. Meanwhile, that young aide Zia recently brought in. I believe his name's Agarves—Buer Agarves. If you'd invite him here tonight . . ."

"No!"

"Alia . . ."

"It's almost dawn, you insatiable old fool! There's a Military Council meeting this morning, the priests will have . . ."

"Don't trust them, darling Alia."

"Of course not!"

"Very well. Now, this Buer Agarves . . ."

"I said no!"

The Old Baron remained silent within her, but she began to feel a headache. A slow pain crept upward from her left cheek into her skull. Once, he'd sent her raging down the corridors with this trick. Now, she resolved to resist him.

"If you persist, I'll take a sedative," she said.

He could see she meant it. The headache began to recede.

"Very well." Petulant. "Another time, then."

"Another time," she agreed.

"Thou didst divide the sand by thy strength; thou breakest the heads of the dragons in the desert. Yea, I behold thee as a beast coming up from the dunes; thou hast the two horns of the lamb, but thou speakest as the dragon."

—Revised Orange Catholic Bible
Arran II:4

It was the immutable prophecy, the threads become rope, a thing Leto now seemed to have known all of his life. He looked out across the evening shadows on the Tanzerouft. One hundred and seventy kilometers due north lay Old Gap, the deep and twisting crevasse through the Shield Wall by which the first Fremen had migrated into the desert.

No doubts remained in Leto. He knew why he stood here alone in the desert, yet filled with a sense that he owned this entire land, that it must do his bidding. He felt the cord which connected him with all of humankind and that profound need for a universe of experiences which made logical sense, a uni-

verse of recognizable regularities within its perpetual changes.

I know this universe.

The worm which had brought him here had come to the stamping of his foot and, rising up in front of him, had stopped like an obedient beast. He'd leaped atop it and with only his membrane-amplified hands, had exposed the leading lip of the worm's rings to keep it on the surface. The worm had exhausted itself in the nightlong dash northward. Its silicon-sulfur internal *factory* had worked at capacity, exhaling lavish gusts of oxygen which a following wind had sent in enveloping eddies around Leto. At times, the warm gusts had made him dizzy, filled his mind with strange perceptions. The reflexive and circular subjectivity of his visions had turned inward upon his ancestry, forcing him to relive portions of his Terranic past, then comparing those portions with his changing self.

Already, he could feel how far he'd drifted from something recognizably human. Seduced by the spice which he gulped from every vein he found, the membrane which covered him no longer was sandtrout just as he was no longer human. Cilia had crept into his flesh, forming a new creature which would seek its own metamorphosis in the eons ahead.

You saw this, Father, and rejected it, he thought. *It was a thing too terrible to face.*

Leto knew what was believed of his father and why.

Muad'Dib died of prescience.

But Paul Atreides had passed from the Universe of Reality into the Alam al Mythal while still alive, fleeing from this thing which his son had dared.

Now, there was only The Preacher.

Leto squatted on the sand and kept his attention northward. The worm would come from that direction and on its back would ride two people: a young Fremen and a blind man.

A flight of pallid bats passed over Leto's head, bending their course southeast. They were random specks in the darkening sky, and a knowledgeable Fremen eye could mark their back-course to learn that shelter lay that way. The Preacher would avoid that shelter, though. His destination was Shuloch where no wild bats were permitted lest they guide strangers to a secret place.

The worm appeared first as a dark movement between the desert and the northern sky. *Matar,* the rain of sand dropped from high altitudes by a dying stormwind, obscured the view for a few minutes, then it returned clearer and closer.

The cold-line at the base of the dune where Leto crouched began to produce its nightly moisture. He tasted the fragile dampness in his nostrils, adjusted the bubble cap of the membrane over his mouth.

There no longer was any need for him to find soaks and sip-wells. From his mother's genes, he had that longer, larger Fremen large intestine to take back water from everything which came its way. The living stillsuit grasped and retained every bit of moisture it encountered. And even while he sat here, the membrane which touched sand extruded pseudopod—cilia to hunt for bits of energy which it could store.

Leto studied the approaching worm. He knew the youthful guide had seen him by this time, noting the spot atop the dune. The worm rider would discern no principle in this object seen from a distance, but that was a problem Fremen had learned how to handle. Any unknown object was dangerous. The young guide's reactions would be quite predictable, even without the vision.

True to that prediction, the worm's course shifted slightly and aimed directly at Leto. Giant worms were a weapon which Fremen had employed many times. Worms had helped beat Shaddam at Arrakeen. This worm, however, failed to do its rider's bidding. It came to a halt ten meters away and no manner of goading would send it across another grain of sand.

Leto arose, feeling the cilia snap back into the membrane behind him. He freed his mouth and called out: "Achlan, wasachlan!" *"Welcome, twice welcome!"*

The blind man stood behind his guide atop the worm, one hand on the youth's shoulder. The man held his face high, nose pointed over Leto's head as though trying to sniff out this interruption. Sunset painted orange on his forehead.

"Who is that?" the blind man asked, shaking his guide's shoulder. "Why have we stopped?" His voice was nasal through the stillsuit plugs.

The youth stared fearfully down at Leto, said: "It is only someone alone in the desert. A child by his looks. I tried to send the worm over him, but the worm would not go."

"Why didn't you say?" the blind man demanded.

"I thought it was only someone alone in the desert!" the youth protested. "But it's a demon."

"Spoken like a true son of Jacurutu," Leto said. "And you, sire, you are The Preacher."

"I am that one, yes."

"This is no garden," Leto said, "but you are welcome to share this place with me tonight."

"Who are you?" The Preacher demanded. "How have you stopped our worm?" There was an ominous tone of recognition in The Preacher's voice. He knew this vision.

"It's a demon!" the young guide protested. "We must flee this place or our souls . . ."

"Silence!" The Preacher roared.

"I am Leto Atreides," Leto said.

"Your worm stopped because I commanded it."

The Preacher stood in frozen silence.

"Come, Father," Leto said. "Alight and spend the night with me. I'll give you sweet syrup to sip. I see you've fremkits with food and waterjars. We'll share our riches here upon the sand."

"Leto's yet a child," The Preacher protested. "And they say he's dead of Corrino treachery. There's no childhood in your voice."

"You know me, sire," Leto said. "I'm small for my age as you were, but my experience is ancient and my voice has learned."

"What do you here in the Inner Desert?" The Preacher asked.

"Bu ji," Leto said. *"Nothing from nothing."* It was the answer of a Zensunni wanderer, one who acted only from a position of rest, without effort and in harmony with his surroundings.

The Preacher shook his guide's shoulder. "Is it a child, truly a child?"

"Aiya," the youth said, keeping a fearful attention on Leto.

A great shuddering sigh shook The Preacher. "No," he said.

"It is a demon in child form," the guide said.

"You will spend the night here," Leto said.

"We will do as he says," The Preacher said. He released his grip on the guide, slipped off the worm's side and slid down a ring to the sand, leaping clear when his feet touched. Turning, he said: "Take the worm off and send it back into the sand. It is tired and will not bother us."

"The worm will not go!" the youth protested.

"It will go," Leto said. "But if you try to flee on it, I'll let it eat you." He moved to one side out of the worm's sensory range, pointed in the direction they had come. "Go that way."

The youth tapped a goad against the ring behind him, wiggled a hook where it held a ring open. Slowly, the worm began to slide over the sand, turning as the youth shifted his hook down a side.

The Preacher, following the sound of Leto's voice, clambered up the duneslope and stood two paces away. It was done with a swift sureness which told Leto this would be no easy contest.

Here, the visions parted.

Leto said: "Remove your suit mask, Father."

The Preacher obeyed, dropping the fold of his hood and withdrawing the mouth cover.

Knowing his own appearance, Leto studied this face, seeing the lines of likeness as though they'd been outlined in light. The lines formed an indefinable reconciliation, a pathway of genes without sharp boundaries, and there was no mistaking them. Those lines came down to Leto from the humming

days, from the water-dripping days, from the miracle seas of Caladan. But now they stood at a dividing point on Arrakis as night waited to fold itself into the dunes.

"So, Father," Leto said, glancing to the left where he could see the youthful guide trudging back to them from where the worm had been abandoned.

"Mu zein!" The Preacher said, waving his right hand in a cutting gesture. *"This is no good!"*

"Koolish zein," Leto said, voice soft. *"This is all the good we may ever have."* And he added, speaking in Chakobsa, the Atreides battle language: "Here I am; here I remain! We cannot forget that, Father."

The Preacher's shoulders sagged. He put both hands to his empty sockets in a long-unused gesture.

"I gave you the sight of my eyes once and took your memories," Leto said. "I know your decisions and I've been to that place where you hid yourself."

"I know." The Preacher lowered his hands. "You will remain?"

"You named me for the man who put that on his coat of arms," Leto said. "J'y suis, j'y reste!"

The Preacher sighed deeply. "How far has it gone, this thing you've done to yourself?"

"My skin is not my own, Father."

The Preacher shuddered. "Then I know how you found me here."

"Yes, I fastened my memory to a place my flesh had never known," Leto said. "I need an evening with my father."

"I'm not your father. I'm only a poor copy, a relic." He turned his head toward the sound of the approaching guide. "I no longer go to the visions for my future."

As he spoke, darkness covered the desert. Stars leaped out above them and Leto, too, turned toward the approaching guide. "Wubakh ul kuhar!" Leto called to the youth. *"Greetings!"*

Back came the response: "Subakh un nar!"

Speaking in a hoarse whisper, The Preacher said: "That young Assan Tariq is a dangerous one."

"All of the Cast Out are dangerous," Leto said. "But not to me." He spoke in a low, conversational tone.

"If that's your vision, I will not share it," The Preacher said.

"Perhaps you have no choice," Leto said. "You are the fil-haquiqa, *the* reality. You are Abu Dhur, Father of the Indefinite Roads of Time."

"I'm no more than bait in a trap," The Preacher said and his voice was bitter.

"And Alia already has eaten that bait," Leto said. "But I don't like its taste."

"You cannot do this!" The Preacher hissed.

"I've already done it. My skin is not my own."

"Perhaps it's not too late for you to . . ."

"It is too late." Leto bent his head to one side. He could hear Assan Tariq trudging up the dune slope toward them, coming to the sound of their voices. "Greetings, Assan Tariq of Shuloch," Leto said.

The youth stopped just below Leto on the slope, a dark shadow there in the starlight. There was indecision in the set of his shoulders, the way he tipped his head.

"Yes," Leto said, "I'm the one who escaped from Shuloch."

"When I heard . . ." The Preacher began. And again: "You cannot do this!"

"I am doing it. What matter if you're made blind once more?"

"You think I fear that?" The Preacher asked. "Do you not see the fine guide they have provided for me?"

"I see him." Again, Leto faced Tariq. "Didn't you hear me, Assan? I'm the one who escaped from Shuloch."

"You're a demon," the youth quavered.

"Your demon," Leto said. "But you are my demon." And Leto felt the tension grow between himself and his father. It was a shadow play all around them, a projection of unconscious forms. And Leto felt the memories of his father, a form of backward prophecy which sorted visions from the familiar reality of this moment.

Tariq sensed it, this battle of the visions. He slid several paces backward down the slope.

"You cannot control the future," The Preacher whispered and the sound of his voice was filled with effort as though he lifted a great weight.

Leto felt the dissonance between them then. It was an element of the universe with which his entire life grappled. Either he or his father would be forced to act soon, making a decision by that act, choosing a vision. And his father was right: trying for some ultimate control of the universe, you only built weapons with which the universe eventually defeated you. To choose and manage a vision required you to balance on a single, thin thread—playing god on a high tightwire with cosmic solitude on both sides. Neither contestant could retreat into death-as-surcease-from-paradox. Each knew the visions and the rules. All of the old illusions were dying. And when one contestant moved, the other might countermove. The only real truth that mattered to them now was that which separated them from the vision background. There was no place of safety, only a transitory shifting of relationships, marked out within the limits which they now imposed and bound for inevitable changes. Each of them had only a desperate and lonely courage upon which to rely, but Leto possessed two advantages: he had committed himself upon a path

from which there was no turning back, and he had accepted the terrible consequences to himself. His father still hoped there was a way back and had made no final commitment.

"You must not! You must not!" The Preacher rasped.

He sees my advantage, Leto thought.

Leto spoke in a conversational tone, masking his own tensions, the balancing effort this other-level contest required. "I have no passionate belief in truth, no faith other than what I create," he said. And he felt then a movement between himself and his father, something with granular characteristics which touched only Leto's own passionately subjective belief in himself. By such belief, he knew that he posted the markers of the Golden Path. Someday, such markers could tell others how to be human, a strange gift from a creature who no longer would be human on that day. But these markers were always set in place by gamblers. Leto felt them scattered throughout the landscape of his inner lives and, feeling this, poised himself for the ultimate gamble.

Softly, he sniffed the air, seeking the signal which both he and his father knew must come. One question remained: Would his father warn the terrified young guide who waited below them?

Presently, Leto sensed ozone in his nostrils, the betraying odor of a shield. True to his orders from the Cast Out, young Tariq was trying to kill both of these dangerous Atreides, not knowing the horrors which this would precipitate.

"Don't," The Preacher whispered.

But Leto knew the signal was a true one. He sensed ozone, but there was no tingling in the air around them. Tariq used a pseudoshield in the desert, a weapon developed exclusively for Arrakis. The Holtzmann effect would summon a worm while it maddened that worm. Nothing would stop such a worm—not water, not the presence of sandtrout . . . nothing. Yes, the youth had planted the device in the dune slope and was beginning to edge away from the danger zone.

Leto launched himself off the dune top, hearing his father scream in protest. But the awful impetus of Leto's amplified muscles threw his body like a missile. One outflung hand caught the neck of Tariq's stillsuit, the other slapped around to grip the doomed youth's robe at the waist. There came a single snap as the neck broke. Leto rolled, lifting his body like a finely-balanced instrument which dove directly into the sand where the pseudoshield had been hidden. Fingers found the thing and he had it out of the sand, throwing it in a looping arc far out to the south of them.

Presently, there came a great hissing-thrashing din out on the

desert where the pseudoshield had gone. It subsided, and silence returned.

Leto looked up to the top of the dune where his father stood, still defiant, but defeated. That was Paul Muad'Dib up there, blind, angry, near despair as a consequence of his flight from the vision which Leto had accepted. Paul's mind would be reflecting now upon the Zensunni Long Koan: *In the very act of predicting an accurate future, Muad'Dib introduced an element of development and growth into the very prescience through which he saw human existence. By this, he brought uncertainty onto himself. Seeking the absolute of orderly prediction, he amplified disorder, distorted prediction.*

Returning to the dunetop in a single leap, Leto said: "Now, I'm your guide."

"Never!"

"Would you go back to Shuloch? Even if they'd welcome you when you arrived without Tariq, where has Shuloch gone now? Do your *eyes* see it?"

Paul confronted his son then, aiming the eyeless sockets at Leto. "Do you really know the universe you have created here?"

Leto heard the particular emphasis. The vision which both of them knew had been set into terrible motion here had required an act of creation at a certain *point* in time. For that moment, the entire sentient universe shared a linear view of time which possessed characteristics of orderly progression. They entered this time as they might step onto a moving vehicle and they could only leave it the same way.

Against this, Leto held the multithread reins, balanced in his own vision-lighted view of time as multilinear and multilooped. He was the sighted man in the universe of the blind. Only he could scatter the orderly rationale because his father no longer held the reins. In Leto's view, a son had altered the past. And a thought as yet undreamed in the farthest future could reflect upon the *now* and move his hand.

Only *his* hand.

Paul knew this because he no longer could see how Leto might manipulate the reins, could only recognize the inhuman consequences which Leto had accepted. And he thought: *Here is the change for which I prayed. Why do I fear it? Because it's the Golden Path!*

"I'm here to give purpose to evolution and, therefore, to give purpose to our lives," Leto said.

"Do you *wish* to live those thousands of years, changing as you now know you will change?"

Leto recognized that his father was not speaking about physical changes. Both of them knew the physical consequences: Leto would adapt and adapt; the skin-which-was-not-his-own would adapt and adapt. The evolutionary thrust of

each part would melt into the other and a single transformation would emerge. When metamorphosis came, *if* it came, a thinking creature of awesome dimensions would emerge upon the universe and that universe would worship him.

No . . . Paul was referring to the inner changes, the thoughts and decisions which would inflict themselves upon the worshippers.

"Those who think you dead," Leto said, "you know what they say about your last words."

"Of course."

"Now I do what all life must do in the service of life," Leto said. "You never said that, but a priest who thought you could never return and call him liar put those words into your mouth."

"I'd not call him liar." Paul took in a deep breath. "Those are good last words."

"Would you stay here or return to that hut in the basin of Shuloch?" Leto asked.

"This is your universe now," Paul said.

The words filled with defeat cut through Leto. Paul had tried to guide the last strands of a personal vision, a choice he'd made years before in Sietch Tabr. For that, he'd accepted his role as an instrument of revenge for the Cast Out, the remnants of Jacurutu. They had contaminated him, but he'd accepted this rather than his view of this universe which Leto had chosen.

The sadness in Leto was so great he could not speak for several minutes. When he could manage his voice, Leto said: "So you baited Alia, tempted her and confused her into inaction and the wrong decisions. And now she knows who you are."

"She knows . . . yes, she knows."

Paul's voice was old then and filled with hidden protests. There was a reserve of defiance in him, though. He said: "I'll take the vision away from you if I can."

"Thousands of peaceful years," Leto said. "That's what I'll give them."

"Dormancy! Stagnation!"

"Of course. And those forms of violence which I permit. It'll be a lesson which humankind will never forget."

"I spit on your lesson!" Paul said. "You think I've not seen a thing similar to what you choose?"

"You saw it," Leto agreed.

"Is your vision any better than mine?"

"Not one whit better. Worse, perhaps," Leto said.

"Then what can I do but resist you?" Paul demanded.

"Kill me, perhaps?"

"I'm not that innocent. I know what you've set in motion. I know about the broken qanats and the unrest."

"And now Assan Tariq will never return to Shuloch. You must go back with me or not at all because this is my vision now."

"I choose not to go back."

How old his voice sounds, Leto thought and the thought was a wrenching pain. He said: "I've the hawk ring of the Atreides concealed in my dishdasha. Do you wish me to return it to you?"

"If I'd only died," Paul whispered. "I truly wanted to die when I went into the desert that night, but I knew I could not leave this world. I had to come back and . . ."

"Restore the legend," Leto said. "I know. And the jackals of Jacurutu were waiting for you that night as you knew they would be. They wanted your visions! You knew that."

"I refused. I never gave them one vision."

"But they contaminated you. They fed you spice essence and plied you with women and dreams. And you *did* have visions."

"Sometimes." How sly his voice sounded.

"Will you take back your hawk ring?" Leto asked.

Paul sat down suddenly on the sand, a dark blotch in the starlight. "No!"

So he knows the futility of that path, Leto thought. This revealed much, but not enough. The contest of the visions had moved from its delicate plane of choices down to a gross discarding of alternates. Paul knew he could not win, but he hoped yet to nullify that single vision to which Leto clung.

Presently, Paul said: "Yes, I was contaminated by the Jacurutu. But you contaminate yourself."

"That's true," Leto admitted. "I am your son."

"And are you a good Fremen?"

"Yes."

"Will you permit a blind man to go into the desert finally? Will you let me find peace on my own terms?" He pounded the sand beside him.

"No, I'll not permit that," Leto said. "But it's your right to fall upon your knife if you insist upon it."

"And you would have my body!"

"True."

"No!"

And so he knows that path, Leto thought. The enshrining of Muad'Dib's body by his son could be contrived as a form of cement for Leto's vision.

"You never told them, did you, Father?" Leto asked.

"I never told them."

"But I told them," Leto said. "I told Muriz. Kralizec, the Typhoon-Struggle."

Paul's shoulders sagged. "You cannot," he whispered. "You cannot."

"I am a creature of this desert now, Father," Leto said. "Would you speak thus to a coriolis storm?"

"You think me coward for refusing that path," Paul said, his voice husky and trembling. "Oh, I understand you well, son. Augury and haruspication have always been

their own torments. But I was never lost in the possible futures because this one is unspeakable!"

"Your Jihad will be a summer picnic on Caladan by comparison," Leto agreed. "I'll take you to Gurney Halleck now."

"Gurney! He serves the Sisterhood through my mother."

And now, Leto understood the extent of his father's vision. "No, Father. Gurney no longer serves anyone. I know the place to find him and I can take you there. It's time for the new legend to be created."

"I see that I cannot sway you. Let me touch you, then, for you are my son."

Leto held out right hand to meet the groping fingers, felt their strength, matched it and resisted every shift of Paul's arm. "Not even a poisoned knife will harm me now," Leto said. "I'm already a different chemistry."

Tears slipped from the sightless eyes and Paul released his grip, dropped his hand to his side. "If I'd chosen your way, I'd have become the bicouros of shaitan. What will you become?"

"For a time, they'll call me the missionary of shaitan, too," Leto said. "Then they'll begin to wonder and, finally, they'll understand. You didn't take your vision far enough, Father. Your hands did good things and evil."

"But the evil was known after the event!"

"Which is the way of many great evils," Leto said. "You crossed over only into a part of my vision. Was your strength not enough?"

"You know I couldn't stay there. I could never do an evil act which was known before the act. I'm not Jacurutu." He clambered to his feet. "Do you think me one of those who laughs alone at night?"

"It is sad that you were never really Fremen," Leto said. "We Fremen know how to commission the Arifa. Our Judges can choose between evils. It's always been that way for us."

"Fremen, is it? Slaves of the fate you helped to make?" Paul stepped toward Leto, reached out in an oddly shy movement, touched Leto's sheathed arm, explored up it to where the membrane exposed an ear, then the cheek and, finally, the mouth. "Ahhhh, that is your own flesh yet," he said. "Where will that flesh take you?" He dropped his hand.

"Into a place where humans may create their futures from instant to instant."

"So you say. An Abomination might say the same."

"I'm not Abomination, though I might've been," Leto said. "I saw how it goes with Alia. A demon lives in her, Father. Ghani and I know that demon: it's the Baron, your grandfather."

Paul buried his face in his hands. His shoulders shook for a moment, then he lowered his hands and his

mouth was set in a harsh line. "There is a curse upon our House. I prayed that you would throw that ring into the sand, that you'd deny me and run away to make . . . another life. It was there for you."

"At what price?"

After a long silence, Paul said: "The end adjusts the path behind it. Just once I failed to fight for my principles. Just once. I accepted the Mahdinate. I did it for Chani, but it made me a bad leader."

Leto found he couldn't answer this. The memory of that decision was there within him.

"I cannot lie to you any more than I could lie to myself," Paul said. "I know this. Every man should have such an auditor. I will only ask this one thing: Is the Typhoon-Struggle necessary?"

"It's that or humans will be extinguished."

Paul heard the truth in Leto's words, spoke in a low voice which acknowledged the greater breadth of his son's vision. "I did not see that among the choices."

"I believe the Sisterhood suspects it," Leto said. "I cannot accept any other explanation of my grandmother's decision."

The night wind blew coldly around them then. It whipped Paul's robe around his legs. He trembled. Seeing this, Leto said: "You've a kit, Father. I'll inflate the tent and we can spend this night in comfort."

But Paul could only shake his head, knowing he would have no comfort from this night or any other. Muad'Dib, The Hero, must be destroyed. He'd said it himself. Only The Preacher could go on now.

Fremen were the first humans to develop a conscious/unconscious symbology through which to experience the movements and relationships of their planetary system. They were the first people anywhere to express climate in terms of a semi-mathematic language whose written symbols embody (and internalize) the external relationships. The language itself was part of the system it described. Its written form carried the shape of what it described. The intimate local knowledge of what was available to support life was implicit in this development. One can measure the extent of this language/system interaction by the fact that Fremen accepted themselves as foraging and browsing animals.

—The Story of Liet-Kynes
By Harq al-Ada

"Kaveh wahid," Stilgar said. *"Bring coffee."* He signaled with a raised hand to an aide who stood at one side near the single door to the austere rock-walled room where he had spent this wakeful night. This was the place where the old Fremen Naib usually took his spartan breakfast, and it was almost breakfast time, but after such a night he did not feel hungry. He

stood, stretching his muscles.

Duncan Idaho sat on a low cushion near the door, trying to suppress a yawn. He had just realized that while they talked, he and Stilgar had gone through an entire night.

"Forgive me, Stil," he said. "I've kept you up all night."

"To stay awake all night adds a day to your life," Stilgar said, accepting the tray with coffee as it was passed in the door. He pushed a low bench in front of Idaho, placed the tray on it and sat across from his guest.

Both men wore the yellow robes of mourning, but Idaho's was a borrowed garment worn because the people of Tabr had resented the Atreides green of his working uniform.

Stilgar poured the dark brew from the fat copper carafe, sipped first and lifted his cup as a signal to Idaho—the ancient Fremen custom: *"It is safe; I have taken some of it."*

The coffee was Harah's work, done just as Stilgar preferred it: the beans roasted to a rose-brown, ground to a fine powder in a stone mortar while still hot, boiled immediately and a pinch of melange added.

Idaho inhaled the spice-rich aroma, sipped carefully but noisily. He still did not know if he had convinced Stilgar. His mentat faculties had begun to work sluggishly in the early hours of the morning, all of his computations confronted at last by the inescapable datum supplied in the message from Gurney Halleck.

Alia had known about Leto! She'd known.

And Javid had to be a part of that knowing.

"I must be freed of your restraints," Idaho said at last, taking up the argument once more.

Stilgar stood his ground. "The agreement of neutrality required me to make hard judgments. Ghani is safe here. You and Irulan are safe here. But you may not send messages. Receive messages, yes, but you may not send them. I've given my word."

"This is not the treatment usually accorded a guest and an old friend who has shared your dangers," Idaho said, knowing he'd used this argument before.

Stilgar put down his cup, setting it carefully into its place on the tray and keeping his attention on it as he spoke. "We Fremen don't feel guilt for the same things that arouse such feelings in others," he said. He raised his attention to Idaho's face.

He must be made to take Ghani and flee this place, Idaho thought. He said: "It was not my intention to raise a storm of guilt."

"I understand that," Stilgar said. "I raise the question to impress upon you our Fremen attitude, because that is what we are dealing

with: Fremen. Even Alia thinks Fremen."

"And the Priests?"

"They are another matter," Stilgar said. "They want the people to swallow the gray wind of sin, taking *that* into the everlasting. This is a great blotch by which they seek to know their own piety." He spoke in a level voice, but Idaho heard the bitterness and wondered why that bitterness could not sway Stilgar.

"It's an old, old trick of autocratic rule," Idaho said. "Alia knows it well. Good subjects must feel guilty. The guilt begins as a feeling of failure. The good autocrat provides many opportunities for failure in the populace."

"I've noticed." Stilgar spoke dryly. "But you must forgive me if I mention to you once more that this is your wife of whom you speak. It is the sister of Muad'Dib."

"She's possessed, I tell you!"

"Many say it. She will have to undergo the test one day. Meanwhile, there are other considerations more important."

Idaho shook his head sadly. "Everything I've told you can be verified. The communication with Jacurutu was always through Alia's Temple. The plot against the twins had accomplices there. Money for the sale of worms off-planet goes there. All of the strings lead to Alia's office, to the Regency."

Stilgar shook his head, drew in a deep breath. "This is neutral territory. I've given my word."

"Things can't go on this way!" Idaho protested.

"I agree." Stilgar nodded. "Alia's caught inside the circle and every day the circle grows smaller. It's like our old custom of having many wives. This pinpoints male sterility." He bent a questioning gaze on Idaho. "You say she deceives you with other men, 'using her sex as a weapon' is the way I believe you've expressed it. Then you have a perfectly legal avenue available to you. Javid's here in Tabr today with messages from Alia. You have only to . . ."

"On your neutral territory?"

"No, but outside in the desert somewhere . . ."

"And if I took that opportunity to escape?"

"You'll not be given such an opportunity."

"Stil, I swear to you, Alia's possessed. What do I have to do to convince you of . . ."

"A difficult thing to prove," Stilgar said. It was the argument he'd used many times during the night.

Idaho recalled Jessica's words, said: "But you've ways of proving it."

"A way, yes," Stilgar said. Again, he shook his head. "Painful, irrevocable. That is why I remind you about our attitude toward guilt. We can free ourselves from guilts which might destroy us in everything except the Trial of Posses-

sion. For that, the tribunal, which is all of the people, accepts complete responsibility."

"You've done it before, haven't you?"

"I'm sure the Reverend Mother didn't omit our history in her recital," Stilgar said. "You well know we've done it before."

Idaho responded to the irritation in Stilgar's voice. "I wasn't trying to trap you in a falsehood. It's just . . ."

"It's the long night and the questions without answers," Stilgar said. "And now it's morning."

"I must be allowed to send a message to Jessica," Idaho said.

"That would be a message to Salusa," Stilgar said. "I don't make evening promises. My word is meant to be kept; that is why Tabr's neutral territory. I will hold you in silence. I have pledged this for my entire household."

"Alia must be brought to your Trial!"

"Perhaps. First, we must find out if there are extenuating circumstances. A failure of authority, possibly? Or even bad luck. It could be a case of that natural bad tendency which all humans share, and not possession at all."

"You want to be sure I'm not just the husband wronged, seeking others to execute his revenge," Idaho said.

"The thought has occurred to others, not to me," Stilgar said. He smiled to take the sting out of his words. "We Fremen have our science of tradition, our Hadith. When we fear a mentat or a Reverend Mother, we revert to the Hadith. It is said that the only fear we cannot correct is the fear of our own mistakes."

"The Lady Jessica must be told," Idaho said. "Gurney says . . ."

"That message may not come from Gurney Halleck."

"It comes from no other. We Atreides have our ways of verifying messages. Stil, won't you at least explore some of . . ."

"Jacurutu is no more," Stilgar said. "It was destroyed many generations ago." He touched Idaho's sleeve. "In any event, I cannot spare the fighting men. These are troubled times, the threat to the qanat . . . you understand?" He sat back. "Now, when Alia . . ."

"There is no more Alia," Idaho said.

"So you say." Stilgar took another sip of coffee, replaced the cup. "Let it rest there, friend Idaho. Often there's no need to tear off an arm to remove a splinter."

"Then let's talk about Ghanima."

"There's no need. She has my countenance, my bond. No one can harm her here."

He cannot be that naive, Idaho thought.

But Stilgar was rising to indicate that the interview was ended.

Idaho levered himself to his feet, feeling the stiffness in his knees. His calves felt numb. As Idaho

stood, an aide entered and stood aside. Javid came into the room behind him. Idaho turned. Stilgar stood four paces away. Without hesitating, Idaho drew his knife in one swift motion and drove its point into the breast of the unsuspecting Javid. The man staggered backward, pulling himself off the knife. He turned, fell onto his face. His legs kicked and he was dead.

"That was to silence the gossip," Idaho said.

The aide stood with drawn knife, undecided how to react. Idaho had already sheathed his own knife, leaving a trace of blood on the edge of his yellow robe.

"You have defiled my honor!" Stilgar cried. "This is neutral ground . . ."

"Shut up!" Idaho glared at the shocked Naib. "You wear a collar, Stilgar!"

It was one of the three most deadly insults which could be directed at a Fremen. Stilgar's face went pale.

"You are a servant," Idaho said. "You've sold Fremen for their water."

This was the second most deadly insult, the one which had destroyed the original Jacurutu.

Stilgar ground his teeth, put a hand on his crysknife. The aide stepped back away from the body in the doorway.

Turning his back on the Naib, Idaho stepped into the door, taking the narrow opening beside Javid's body and speaking without turning, delivered the third insult. "You have no immortality, Stilgar. None of your descendants carry your blood!"

"Where do you go now, mentat?" Stilgar called as Idaho continued leaving the room. Stilgar's voice was as cold as a wind from the poles.

"To find Jacurutu," Idaho said, still not turning.

Stilgar drew his knife. "Perhaps I can help you."

Idaho was at the outer lip of the passage now. Without stopping, he said: "If you'd help me with your knife, water-thief, please do it in my back. That's the fitting way for one who wears the collar of a demon."

With two leaping strides, Stilgar crossed the room, stepped on Javid's body and caught Idaho in the outer passage. One gnarled hand jerked Idaho around and to a stop. Stilgar confronted Idaho with bared teeth and a drawn knife. Such was his rage that Stilgar did not even see the curious smile on Idaho's face.

"Draw your knife, mentat scum!" Stilgar roared.

Idaho laughed. He cuffed Stilgar sharply—left hand, right hand—two stinging slaps to the head.

With an incoherent screech, Stilgar drove his knife into Idaho's abdomen, striking upward through the diaphragm into the heart.

Idaho sagged onto the blade,

grinned up at Stilgar, whose rage dissolved into sudden icy shock.

"Two deaths for the Atreides," Idaho husked. "The second for no better reason than the first." He lurched sideways, collapsed to the stone floor on his face. Blood spread out from his wound.

Stilgar stared down past his dripping knife at the body of Idaho, took a deep, trembling breath. Javid lay dead behind him. And the consort of Alia, the Womb of Heaven, lay dead at Stilgar's own hands. It might be argued that a Naib had but protected the honor of his name, avenging the threat to his promised neutrality. But this dead man was Duncan Idaho. No matter the arguments available, no matter the "extenuating circumstances," nothing could erase such an act. Even were Alia to approve privately, she would be forced to respond publicly in revenge. She was, after all, Fremen. To rule Fremen, she could be nothing else, not even to the smallest degree.

Only then did it occur to Stilgar that this situation was precisely what Idaho had intended to buy with his "second death."

Stilgar looked up, saw the shocked face of Harah, his second wife, peering at him in an enclosing throng. Everywhere Stilgar turned there were faces with identical expressions: shock and understanding of the consequences.

Slowly, Stilgar drew himself erect, wiped the blade on his sleeve and sheathed it. Speaking to the faces, his tone casual, he said: "Those who'll go with me should pack at once. Send men to summon worms."

"Where will you go, Stilgar?" Harah asked.

"Into the desert."

"I will go with you," she said.

"Of course you'll go with me. All of my wives will go with me. And Ghanima. Get her, Harah. At once."

"Yes, Stilgar . . . at once." She hesitated. "And Irulan?"

"If she wishes."

"Yes, husband." Still, she hesitated. "You take Ghani as hostage?"

"Hostage?" He was genuinely startled by the thought. "Woman"—he touched Idaho's body softly with a toe—"if this mentat was right, I'm Ghani's only hope." And he remembered then Leto's warning: *"Beware of Alia. You must take Ghani and flee."*

After the Fremen, all Planetologists see life as expressions of energy and look for the overriding relationships. In small pieces, bits and parcels which grow into general understanding, the Fremen racial wisdom is translated into a new certainty. The thing Fremen have as a people, any people can have. They need but develop a sense for energy relationships. They need but observe that energy soaks

up the patterns of things and builds with those patterns.

—The Arrakeen Catastrophe
After Harq al-Ada

It was Tuek's Sietch on the inner lip of False Wall. Halleck stood in the shadow of the rock buttress which shielded the high entrance to the sietch waiting for those inside to decide whether they would shelter him. He turned his gaze outward to the northern desert and then upward to the gray-blue morning sky. The smugglers here had been astonished to learn that he, an offworlder, had captured a worm and ridden it. But Halleck had been equally astonished at their reaction. The thing was simple for an agile man who'd seen it done many times.

Halleck returned his attention to the desert, the silver desert of shining rocks and gray-green fields where water had worked its magic. All of this struck him suddenly as an enormously fragile containment of energy, of life—everything threatened by an abrupt shift in the pattern of change.

He knew the source of this reaction. It was the bustling scene on the desert floor below him. Containers of dead sandtrout were being trundled into the sietch for distillation and recovery of their water. There were thousands of the creatures. They had come to an outpouring of water. And it was this outpouring which had set Halleck's mind racing.

Halleck stared downward across the sietch fields and the qanat boundary which no longer flowed with precious water. He had seen the holes in the qanat's stone walls, the rending of the rock liner which had spilled water into the sand. What had made those holes? Some stretched along twenty meters of the qanat's most vulnerable sections, in places where soft sand led outward into water-absorbing depressions. It was those depressions which had swarmed with sandtrout. The children of the sietch were killing them and capturing them.

Repair teams worked on the shattered walls of the qanat. Others carried minims of irrigation water to the most needy plants. The water source in the gigantic cistern beneath Tuek's windtrap had been closed off, preventing the flow into the shattered qanat. The sun-powered pumps had been disconnected. The irrigation water came from dwindling pools at the bottom of the qanat and, laboriously, from the cistern within the sietch.

The metal frame of the doorseal behind Halleck crackled in the growing warmth of the day. As though the sound moved his eyes, Halleck found his gaze drawn to the farthest curve of the qanat, to the place where water had reached most impudently into the desert. The garden-hopeful planners of the sietch had planted a special tree there and it was doomed unless the water flow could be restored soon.

Halleck stared at the silly, trailing plumage of a willow tree there shredded by sand and wind. For him, that tree symbolized the new reality for himself and for Arrakis.

Both of us are alien here.

They were taking a long time over their decision within the sietch, but they could use good fighting men. Smugglers always needed good men. Halleck had no illusions about them, though. The smugglers of this age were not the smugglers who'd sheltered him so many years ago when he'd fled the dissolution of his Duke's fief. No, these were a new breed, quick to seek profit.

Again, he focused on the silly willow. It came to Halleck then that the stormwinds of his new reality might shred these smugglers and all of their friends. It might destroy Stilgar with his fragile neutrality and take with him all of the tribes who remained loyal to Alia. They'd all become colonial peoples. Halleck had seen it happen before, knowing the bitter taste of it on his own homeworld. He saw it clearly, recalling the mannerisms of the city Fremen, the pattern of the suburbs, and the unmistakable ways of the rural sietch which rubbed off even on this smugglers' hideaway. The rural districts were colonies of the urban centers. They'd learned how to wear a padded yoke, led into it by their greed if not their superstitions. Even here, especially here, the people had the attitude of a subject population, not the attitude of free men. They were defensive, concealing, evasive. Any manifestation of authority was subject to resentment . . . any authority: the Regency's, Stilgar's, their own Council . . .

I can't trust them, Halleck thought. He could only use them and nurture their distrust of others. It was sad. Gone was the old give and take of free men. The old ways had been reduced to ritual words, their origins lost to memory.

Alia had done her work well, punishing opposition and rewarding assistance, shifting the Imperial forces in random fashion, concealing the major elements of her Imperial power. The spies! Gods below, the spies she must have!

Halleck could almost see the deadly rhythm of movement and countermovement by which Alia hoped to keep her opposition off balance.

If the Fremen remain dormant, she'll win, he thought.

The doorseal behind him crackled as it was opened. A sietch attendant named Melides emerged. He was a short man with a gourd-like body which dwindled into spindly legs whose ugliness was only accented by a stillsuit.

"You have been accepted," Melides said.

And Halleck heard the sly dissimulation in the man's voice. What that voice revealed told Hal-

leck there was sanctuary here for only a limited time.

Just until I can steal one of their 'thopters, he thought.

"My gratitude to your Council," he said. And he thought of Esmar Tuek for whom this sietch had been named. Esmar, long dead of someone's treachery, would have slit the throat of this Melides on sight.

Any path which narrows future possibilities may become a lethal trap. Humans are not threading their way through a maze; they scan a vast horizon filled with unique opportunities. The narrowing viewpoint of the maze should appeal only to creatures with their noses buried in sand. Sexually produced uniqueness and differences are the life-protection of the species.

—The Spacing Guild Handbook

"Why do I not feel grief?" Alia directed the question at the ceiling of her small audience chamber, a room she could cross in ten paces one way and fifteen the other. It had two tall and narrow windows which looked out across the Arrakeen rooftops at the Shield Wall. It was almost noon. The sun burned down into the pan upon which the city had been built.

Alia lowered her gaze to Buer Agarves, the former Tabrite and now aide to Zia who directed the Temple guards. Agarves had brought the news that Javid and Idaho were dead. A mob of sycophants, aides and guards had come in with him and more crowded the areaway outside, revealing that they already knew Agarves' message.

Bad news traveled fast on Arrakis.

He was a small man, this Agarves, with a round face for a Fremen, almost infantile in its roundness. He was one of the new breed who had gone to water fatness. Alia saw him as though he had been split into two images: one with a serious face and opaque indigo eyes, a worried expression around the mouth, the other image sensuous and vulnerable, excitingly vulnerable. She especially liked the thickness of his lips.

Although it was not yet noon, Alia felt something in the shocked silence around her that spoke of sunset.

Idaho should've died at sunset, she told herself.

"How is it, Buer, that you're the bearer of this news?" she asked, noting the watchful quickness which came into his expression.

Agarves tried to swallow, spoke in a hoarse voice hardly more than a whisper. "I went with Javid, you recall? And when . . . Stilgar sent me to you. He said for me to tell you that I carried his final obedience."

"Final obedience," she echoed. "What'd he mean by that?"

"I don't know, Lady Alia," he pleaded.

"Explain to me again what you saw," she ordered, and she wondered at how cold her skin felt.

"I saw"—he bobbed his head nervously, looked at the floor in front of Alia—"I saw the Holy Consort dead upon the floor of the central passage and Javid lay dead nearby in a side passage. The women already were preparing them for Huanui."

"And Stilgar summoned you to this scene?"

"That is true, My Lady. Stilgar summoned me. He sent Modibo, the Bent One, his messenger in sietch. Modibo gave me no warning. He merely told me Stilgar wanted me."

"And you saw my husband's body there on the floor?"

He met her eyes with a darting glance, returned his attention once more to the floor in front of her before nodding. "Yes, My Lady. And Javid dead nearby. Stilgar told me . . . told me that the Holy Consort had slain Javid."

"And my husband, you say Stilgar . . ."

"He said it to me with his own mouth, My Lady. Stilgar said he had done this. He said the Holy Consort provoked him to rage."

"Rage," Alia repeated. "How was that done?"

"He didn't say. No one said. I asked and no one said."

"And that's when you were sent to me with this news?"

"Yes, My Lady."

"Was there nothing you could do?"

Agarves wet his lips with his tongue, then: "Stilgar commanded, My Lady. It was his sietch."

"I see. And you always obeyed Stilgar."

"I always did, My Lady, until he freed me from my bond."

"When you were sent to my service, you mean?"

"I obey only you now, My Lady."

"Is that right? Tell me, Buer, if I commanded you to slay Stilgar, your old Naib, would you do it?"

He met her gaze with a growing firmness. "If you commanded it, My Lady."

"I do command it. Have you any idea where he's gone?"

"Into the desert; that's all I know, My Lady."

"How many men did he take?"

"Perhaps half the effectives."

"And Ghanima and Irulan with him!"

"Yes, My Lady. Those who left are burdened with their women, their children and their baggage. Stilgar gave everyone a choice—go with him or be freed of their bond. Many chose to be freed. They will select a new naib."

"I'll select their new naib! And it'll be you, Buer Agarves, on the day you bring me Stilgar's head."

Agarves could accept selection by battle. It was a Fremen way. He said: "As you command, My Lady. What forces may I . . ."

"See Zia. I can't give you many 'thopters for the search. They're needed elsewhere. But you'll have enough fighting men. Stilgar has defamed his honor. Many will serve with you gladly."

"I'll get about it, then, My Lady."

"Wait!" She studied him a moment, reviewing who she could send to watch over this vulnerable infant. He would need close watching until he'd proved himself. Zia would know who to send.

"Am I not dismissed, My Lady?"

"You are not dismissed. I must consult you privately and at length on your plans to take Stilgar." She put a hand to her face. "I'll not grieve until you've exacted my revenge. Give me a few minutes to compose myself." She lowered her hand. "One of my attendants will show you the way." She gave a subtle hand signal to one of her attendants, whispered to Shalus, her new Dame of Chamber: "Have him washed and perfumed before you bring him. He smells of worm."

"Yes, mistress."

Alia turned then, feigning the grief she did not feel, and fled to her private chambers. There, in her bedroom, she slammed the door into its tracks, cursed and stamped her foot.

Damn that Duncan! Why? Why? Why?

She sensed a deliberate provocation from Idaho. He'd slain Javid and provoked Stilgar. It said he knew about Javid. The whole thing must be taken as a message from Duncan Idaho, a final gesture.

Again, she stamped her foot and again, raging across the bedchamber.

Damn him! Damn him! Damn him!

Stilgar gone over to the rebels and Ghanima with him. Irulan, too.

Damn them all!

Her stamping foot encountered a painful obstacle, descending onto metal. Pain brought a cry from her and she peered down, finding that she'd bruised her foot on a metal buckle. She snatched it up, stood frozen at the sight of it in her hand. It was an old buckle, one of the silver and platinum originals from Caladan awarded originally by the Duke Leto Atreides I to his swordmaster, Duncan Idaho. She'd seen Duncan wear it many times. And he'd discarded it here.

Alia's fingers clutched convulsively at the buckle. Idaho had left it here . . . when . . .

Tears sprang from her eyes, forced out against the great Fremen conditioning. Her mouth drew down into a frozen grimace and she sensed the old battle begin within her skull, reaching out to her fingertips, to her toes. She felt that she had become two people. One looked upon these fleshly contortions with astonishment. The other sought submission to an

enormous pain spreading in her chest. The tears flowed freely from her eyes now, and the Astonished One within her demanded querulously: "Who cries? Who is it that cries? Who is crying now?"

But nothing stopped the tears and she felt the painfulness which flamed through her breast as it moved her flesh and hurled her onto the bed.

Still, something demanded out of that profound astonishment: "Who cries? Who is that . . ."

By these acts Leto II removed himself from the evolutionary succession. He did it with a deliberate cutting action, saying: "To be independent is to be removed." Both twins saw beyond the needs of memory as a measuring process, that is, a way of determining their distance from their human origins. But it was left to Leto II to do the audacious thing, recognizing that a real creation is independent of its creator. He refused to re-enact the evolutionary sequence, saying, "That, too, takes me farther and farther from humanity." He saw the implications in this: that there can be no truly closed systems in life.

—The Holy Metamorphosis
By Harq al-Ada

There were birds thriving on the insect life which teemed in the damp sand beyond the broken qanat: parrots, magpies, jays. This had been a djedida, the last of the new towns, built on a foundation of exposed basalt. It was abandoned now. Ghanima, using the morning hours to study the area beyond the original plantings of the abandoned sietch, detected movement and saw a banded gecko lizard. There'd been a gila woodpecker earlier, nesting in a mud wall of the djedida.

She thought of it as a sietch, but it was really a collection of low walls made of stabilized mud brick surrounded by plantings to hold back the dunes. It lay within the Tanzerouft six hundred kilometers south of Sihaya Ridge. Without human hands to maintain it, the sietch already was beginning to melt back into the desert, its walls eroded by sandblast winds, its plants dying, its plantation area cracked by the burning sun.

Yet the sand beyond the shattered qanat remained damp, attesting to the fact that the squat bulk of the windtrap still functioned.

In the months since their flight from Tabr the fugitives had sampled the protection of several such places made uninhabitable by the Desert Demon. Ghanima didn't believe in the Desert Demon, although there was no denying the visible evidence of the qanat's destruction.

Occasionally, they had word from the northern settlements through encounters with rebel spice hunters. A few 'thopters—some said no more than six—carried out

search flights seeking Stilgar but Arrakis was large and its desert was friendly to the fugitives. Reportedly, there was a search-and-destroy force charged with finding Stilgar's band, but the force which was led by the former Tabrite Buer Agarves, had other duties and often returned to Arrakeen.

The rebels said there was little fighting between their men and the troops of Alia. Random depredations of the Desert Demon made home guard duty the first concern of Alia and the Naibs. Even the smugglers had been hit, but they were said to be scouring the desert for Stilgar, wanting the price on his head.

Stilgar had brought his band into the djedida just before dark the previous day, following the unerring moisture sense of his old Fremen nose. He'd promised they would head south for the palmyries soon, but refused to put a date on the move. Although he carried a price on his head which once would have bought a planet, Stilgar seemed the happiest and most carefree of men.

"This is a good place for us," he'd said, pointing out that the windtrap still functioned. "Our friends have left us some water."

They were a small band now, sixty people in all. The old, the sick and the very young had been filtered south into the palmyries, absorbed there by trusted families. Only the toughest remained and they had many friends to the north and the south.

Ghanima wondered why Stilgar refused to discuss what was happening to the planet. Couldn't he see it? As qanats were shattered, Fremen pulled back to the northern and southern lines which once had marked the extent of their holdings. This movement could only signal what must be happening to the Empire. One condition was the mirror of the other.

Ghanima ran a hand under the collar of her stillsuit and re-sealed it. Despite her worries, she felt remarkably free here. The inner lives no longer plagued her, although she sometimes felt their memories inserted into her consciousness. She knew from those memories what this desert had been once, before the work of the ecological transformation. It'd been drier, for one thing. That unrepaired windtrap still functioned because it processed moist air.

Many creatures which once had shunned this desert ventured to live here now. Many in the band remarked how the daylight owls proliferated. Even now, Ghanima could see antbirds. They jigged and danced along the insect lines which swarmed in the damp sand at the end of the shattered qanat. Few badgers were to be seen out here, but there were kangaroo mice in uncounted numbers.

Superstitious fear ruled the new Fremen, and Stilgar was no better

than the rest. This djedida had been given back to the desert after its qanat had been shattered a fifth time in eleven months. Four times they'd repaired the ravages of the Desert Demon, then they'd no longer had the surplus water to risk another loss.

It was the same all through the djedidas and in many of the old sietches. Eight out of nine new settlements had been abandoned. Many of the old sietch communities were more crowded than they had ever been before. And while the desert entered this new phase, Fremen reverted to their old ways. They saw omens in everything. Were worms increasingly scarce except in the Tanzerouft? It was the judgment of Shai Hulud! And dead worms had been seen with nothing to say why they died. They went back to desert dust swiftly after death, but those crumbling hulks which Fremen chanced upon filled the observers with terror.

Stilgar's band had encountered such a hulk the previous month and it had taken four days for them to shake off the feeling of evil. The thing had reeked of sour and poisonous putrefaction. Its moldering hulk had been found sitting on top of a giant spice blow, the spice mostly ruined.

Ghanima turned from observing the qanat and looked back at the djedida. Directly in front of her lay a broken wall which once had protected a mushtamal, a small garden annex. She'd explored the place with a firm dependence upon her own curiosity and had found a store of flat, unleavened spice bread in a stone box.

Stilgar had destroyed it, saying: "Fremen would never leave good food behind them."

Ghanima had suspected he was mistaken, but it hadn't been worth the argument or the risk. Fremen were changing. Once, they'd moved freely across the bled, drawn by natural needs: water, spice, trade. Animal activities had been their alarm clocks. But animals moved to strange new rhythms now while most Fremen huddled close in their old cave warrens within the shadow of the northern Shield Wall. Spice hunters in the Tanzerouft were rare and only Stilgar's band moved in the old ways.

She trusted Stilgar and his fear of Alia. Irulan reinforced his arguments now, reverting to odd Bene Gesserit musings. But on faraway Salusa, Farad'n still lived. Someday, there would have to be a reckoning.

Ghanima looked up at the gray-silver morning sky, questing in her mind. Where was help to be found? Where was there someone to listen when she revealed what she saw happening all around them? The Lady Jessica stayed on Salusa, if the reports were to be believed. And Alia was a creature on a pedestal, involved only in being colossal while she drifted far-

ther and farther from reality. Gurney Halleck was nowhere to be found, although he was reported seen everywhere. The Preacher had gone into hiding, his heretical rantings only a fading memory.

And Stilgar.

She looked across the broken wall to where Stilgar was helping repair the cistern. Stilgar reveled in his role as the will o' the desert, the price upon his head growing monthly.

Nothing made sense anymore. Nothing.

Who was this Desert Demon, this creature able to destroy qanats as though they were false idols to be toppled into the sand? Was it a rogue worm? Was it a third force in rebellion, many people? No one believed it was a worm. The water would kill any worm venturing against a qanat. Many Fremen believed the Desert Demon was actually a revolutionary band bent on overthrowing Alia's Mahdinate and restoring Arrakis to its old ways. Those who believed this said it would be a good thing. Get rid of that greedy apostolic succession which did little else than uphold its own mediocrity. Get back to the true religion which Muad'Dib had espoused.

A deep sigh shook Ghanima. *Oh, Leto,* she thought. *I'm almost glad you didn't live to see these days. I'd join you myself, but I've a knife yet unblooded. Alia and Farad'n. Farad'n and Alia. The old Baron's her demon and that can't be permitted.*

Harah came out of the djedida, approaching Ghanima with a steady sand-swallowing pace. Harah stopped in front of Ghanima, demanded, "What are you doing alone out here?"

"This is a strange place, Harah. We should leave."

"Stilgar waits to meet someone here."

"Oh? He didn't tell me that."

"Why should he tell you everything? Maku?" Harah slapped the water pouch which bulged the front of Ghanima's robe. "Are you a grown woman to be pregnant?"

"I've been pregnant so many times there's no counting them," Ghanima said. "Don't play those adult-child games with me!"

Harah took a backward step at the venom in Ghanima's voice.

"You're a band of stupids," Ghanima said, waving her hand to encompass the djedida and the activities of Stilgar and his people. "I should never have come with you."

"You'd be dead by now if you hadn't."

"Perhaps. But you don't see what's right in front of your faces! Who is it that Stilgar waits to meet here?"

"Buer Agarves."

Ghanima stared at her.

"He is being brought here secretly by friends from Red Chasm Sietch," Harah explained.

"Alia's little plaything?"

"He is being brought under blindfold."

"Does Stilgar believe that?"

"Buer asked for the parley. He agreed to all of our terms."

"Why wasn't I told about this?"

"Stilgar knew you would argue against it."

"Argue against . . . This is madness!"

Harah scowled. "Don't forget that Buer is . . ."

"He's *Family*!" Ghanima snapped. "He's the grandson of Stilgar's cousin. I know. And the Farad'n whose blood I'll draw one day is as close a relative to me. Do you think that'll stay my knife?"

"We've had a distrans. No one follows his party."

Ghanima spoke in a low voice: "Nothing good will come of this, Harah. We should leave at once."

"Have you read an omen?" Harah asked. "That dead worm we saw! Was that . . ."

"Stuff that into your womb and give birth to it elsewhere!" Ghanima raged. "I don't like this meeting nor this place. Isn't that enough?"

"I'll tell Stilgar what you . . ."

"I'll tell him myself!" Ghanima strode past Harah, who made the sign of the worm horns at her back to ward off evil.

But Stilgar only laughed at Ghanima's fears and ordered her to look for sandtrout as though she were one of the children. She fled into one of the djedida's abandoned houses and crouched in a corner to nurse her anger. The emotion passed quickly though, and she felt the stirring of the inner lives and remembered someone saying: "If we can immobilize them, things will go as we plan."

What an odd thought.

She couldn't recall who'd said those words, though.

Muad'Dib was disinherited and he spoke for the disinherited of all time. He cried out against that profound injustice which alienates the individual from that which he was taught to believe, from that which seemed to come to him as a right.

—The Mahdinate, An Analysis
By Harq al-Ada

Gurney Halleck sat on the butte at Shuloch with his baliset beside him on a spice-fiber rug. Below him, the enclosed basin swarmed with workers planting crops. The sand ramp up which the Cast Out had lured worms on a spice trail had been blocked off with a new qanat. Plantings moved down the slope to hold it.

It was almost time for the noon meal and Halleck had been on the butte for more than an hour, seeking privacy in which to think. Humans did the labor below him, but everything he saw was the work of melange. Leto's personal estimate was that spice production would fall soon to a stabilized one-tenth of its peak in the Harkonnen years. Stockpiles throughout the Empire

doubled in value at every new posting. Three hundred and twenty-one liters were said to have bought half of Novobruns Planet from the Metulli Family.

The Cast Out worked like men driven by a devil, and perhaps they were. Before every meal, they faced the Tanzerouft and prayed to Shai Hulud Personified. That was how they saw Leto and, through their eyes, Halleck saw a future where most of humankind shared that view. Halleck wasn't sure he liked the prospect.

Leto had set the pattern when he'd brought Halleck and The Preacher here in Halleck's stolen 'thopter. With his bare hands, Leto had breached the Shuloch qanat, hurling large stones more than fifty meters. When the Cast Out had tried to intervene, Leto had decapitated the first to reach him, using no more than a blurred sweep of his arm. He'd hurled others back into their companions and had laughed at their weapons. In a demon-voice, he'd roared at them: "Fire will not touch me! Your knives will not harm me! I wear the skin of Shai Hulud!"

The Cast Out had recognized him then and recalled his escape, leaping from the butte "directly to the desert." They'd prostrated themselves before him and Leto had issued his orders. "I bring you two guests. You will guard them and honor them. You will rebuild your qanat and begin planting an oasis garden. One day, I'll make my home here. You will prepare my home. You will sell no more spice, but you will store every bit you collect."

On and on he'd gone with his instructions and the Cast Out had heard every word, seeing him through fear-glazed eyes, through a terrifying awe.

Here was Shai Hulud come up from the sand at last!

There'd been no intimation of this metamorphosis when Leto had found Halleck with Ghadhean al-Fali in one of the small rebel sietches at Gare Ruden. With his blind companion, Leto had come up from the desert along the old spice route, traveling by worm through an area where worms were now a rarity. He'd spoken of several detours forced upon him by the presence of moisture in the sand, enough water to poison a worm. They'd arrived shortly after noon and had been brought into the stone-walled common room by guards.

The memory haunted Halleck now.

"So this is The Preacher," he'd said.

Striding around the blind man, studying him, Halleck recalled the stories about him. No stillsuit mask hid the old face in sietch and the features were there for memory to make its comparisons. Yes, the man did look like the old Duke for

whom Leto had been named. Was it a chance likeness?

"You know the stories about this one?" Halleck asked, speaking in an aside to Leto. "That he's your father come back from the desert."

"I've heard the stories."

Halleck turned to examine the boy. Leto wore an odd stillsuit with rolled edges around his face and ears. A black robe covered it and sandboots sheathed his feet. There was much to be explained about his presence here—how he'd managed to escape once more.

"Why do you bring The Preacher here?" Halleck asked. "In Jacurutu they said he works for them."

"No more. I bring him because Alia wants him dead."

"So? You think this is a sanctuary?"

"You are his sanctuary."

All this time, The Preacher stood near them listening but giving no sign that he cared which turn their discussion took.

"He has served me well, Gurney," Leto said. "House Atreides has not lost all sense of obligation to those who serve us."

"House Atreides?"

"I am House Atreides."

"You fled Jacurutu before I could complete the testing which your grandmother ordered," Halleck said, his voice cold. "How can you assume . . ."

"This man's life is to be guarded as though it were your own." Leto spoke as though there were no argument and he met Halleck's stare without flinching.

Jessica had trained Halleck in many of the Bene Gesserit refinements of observation and he'd detected nothing in Leto which spoke of other than calm assurance. Jessica's orders remained, though.

"Your grandmother charged me to complete your education and be sure you're not possessed."

"I'm not possessed." Just a flat statement.

"Why did you run away?"

"Namri had orders to kill me no matter what I did. His orders were from Alia."

"Are you a Truthsayer, then?"

"I am." Another flat statement filled with self-assurance.

"And Ghanima as well?"

"No."

The Preacher broke his silence then, turning his blind sockets toward Halleck, but pointing at Leto. "You think *you* can test him?"

"Don't interfere when you know nothing of the problem or its consequences," Halleck ordered, not looking at the man.

"Oh, I know its consequences well enough," The Preacher said. "I was tested once by an old woman who thought she knew what she was doing. She didn't know, as it turned out."

Halleck looked at him then. "You're another Truthsayer?"

"Anyone can be a Truthsayer, even you," The Preacher said. "It's

a matter of self-honesty about the nature of your own feelings. It requires that you have an inner agreement with truth which allows ready recognition."

"Why do you interfere?" Halleck asked, putting hand to crysknife. Who was this Preacher?

"I'm responsive to these events," The Preacher said. "My mother could put her own blood upon the altar, but I have other motives. And I do see your problem."

"Oh?" Halleck was actually curious now.

"The Lady Jessica ordered you to differentiate between the wolf and the dog, between ze'eb and ke'leb. By her definition, a wolf is someone with power who misuses that power. However, between wolf and dog there is a dawn period when you cannot distinguish between them."

"That's close to the mark," Halleck said, noting how more and more people of the sietch had entered the common room to listen. "How do you know this?"

"Because I know this planet. You don't understand? Think how it is. Beneath the surface there are rocks, dirt, sediment, sand. That's the planet's memory, the picture of its history. It's the same with humans. The dog remembers the wolf. Each universe revolves around a core of *being* and outward from that core go all of the memories, right out to the surface."

"Very interesting," Halleck said. "How does that help me carry out my orders?"

"Review the picture of your history which is within you. Communicate as animals would communicate."

Halleck shook his head. There was a compelling directness about this Preacher, a quality which he'd recognized many times in the Atreides, and there was more than a little hint that the man was employing the powers of Voice. Halleck felt his heart begin to hammer. Was it possible?

"Jessica wanted an ultimate test, a stress by which the underlying fabric of her grandson exposed itself," The Preacher said. "But the fabric's always there, open to your gaze."

Halleck turned to stare at Leto. The movement came of itself, compelled by irresistible forces.

The Preacher continued as though lecturing an obstinate pupil. "This young person confuses you because he's not a singular being. He's a community. As with any community under stress, any member of that community may assume command. This command isn't always benign and we get our stories of Abomination. But you've already wounded this community enough, Gurney Halleck. Can't you see that the transformation already has taken place? This youth has achieved an inner cooperation which is enormously powerful, that cannot be subverted. Without eyes,

I see this. Once, I opposed him, but now I do his bidding. He is the Healer."

"Who are you?" Halleck demanded.

"I'm no more than what you see. Don't look at me, look at this person you were ordered to teach and test. He has been formed by crisis. He survived a lethal environment. He is here."

"Who are you?" Halleck insisted.

"I tell you only to look at this Atreides youth! He is the ultimate feedback upon which our species depends. He'll reinsert into the system the results of its past performance. No other human could know that past performance as he knows it. And you consider destroying such a one!"

"I was ordered to test him and I've not . . ."

"But you have!"

"Is he Abomination?"

A weary laugh shook The Preacher. "You persist in Bene Gesserit nonsense. How they create the myths by which men sleep!"

"Are you Paul Atreides?" Halleck asked.

"Paul Atreides is no more. He tried to stand as a supreme moral symbol while he renounced all moral pretensions. He became a saint without a god, every word a blasphemy. How can you think—"

"Because you speak with his voice."

"Would you test *me*, now? Beware, Gurney Halleck."

Halleck swallowed, forced his attention back to the impassive Leto who still stood calmly observant.

"Who's being tested?" The Preacher asked. "Is it, perhaps, that the Lady Jessica tests you, Gurney Halleck?"

Halleck found this thought deeply disturbing, wondered why he let this Preacher's words move him. But it was a deep thing in Atreides servants to obey that autocratic mystique. Jessica, explaining this, had made it even more mysterious. Halleck now felt something changing within himself, a *something* whose edges had only been touched by the Bene Gesserit training Jessica had pressed upon him. Inarticulate fury arose in him. He did not want to change!

"Which of you plays god and to what end?" The Preacher asked. "You cannot rely on reason alone to answer that question."

Slowly, deliberately, Halleck raised his attention from Leto to the blind man. Jessica kept saying he should achieve the balance of *kairits*—"thou shalt-thou shalt not." She called it a discipline without words and phrases, no rules or arguments. It was the sharpened edge of his own internal truth, all-engrossing. Something in the blind man's voice, his tone, his manner, ignited a fury which burned itself into blinding calmness within Halleck.

"Answer my question," The Preacher said.

Halleck felt the words deepen his concentration upon this place, this one moment and its demands. His position in the universe was defined only by his concentration. No doubt remained in him. This was Paul Atreides, not dead, but returned. And this non-child, Leto. Halleck looked once more at Leto, really saw him. He saw the signs of stress around the eyes, the sense of balance in the stance, the passive mouth with its quirking sense of humor. Leto stood out from his background as though at the focus of a blinding light. He had achieved harmony simply by accepting it.

"Tell me, Paul," Halleck said, "does your mother know?"

The Preacher sighed. "To the Sisterhood, all of it, I am dead. Do not try to revive me."

Still not looking at him, Halleck asked: "But why does she . . ."

"She does what she must. She makes her own life, thinking she rules many lives. Thus we all play god."

"But you're alive," Halleck whispered, overcome now by his realization, turning at last to stare at this man, younger than himself, but so aged by the desert that he appeared to carry twice Halleck's years.

"What is that?" Paul demanded. "Alive?"

Halleck peered around them at the watching Fremen, their faces caught between doubt and awe.

"My mother never had to learn my lesson." It was Paul's voice! "To be a god can become ultimately boring and degrading. There'd be reason enough for the invention of free will! A god might wish to escape into sleep and be alive only in the unconscious projections of his dream-creatures."

"But you're alive!" Halleck spoke louder now.

Paul ignored the excitement in his old companion's voice, asked: "Would you really have pitted this lad against his sister in the testmashad? What deadly nonsense! Each would have said: 'No! Kill me! Let the other live!' Where would such a test lead? What is it then to be alive, Gurney?"

"That was not the test," Halleck protested. He did not like the way the Fremen pressed closer around them, studying Paul, ignoring Leto.

But Leto intruded now. "Look at the fabric, Father."

"Yes . . . yes . . ." Paul held his head high as though sniffing the air. "It's Farad'n, then!"

"How easy it is to follow our thoughts instead of our senses," Leto said.

Halleck had been unable to follow this thought and, about to ask, was interrupted by Leto's hand upon his arm. "Don't ask, Gurney. You might return to suspecting that I'm Abomination. No! Let it happen, Gurney. If you try to force it, you'll only destroy yourself."

But Halleck felt himself over-

come by doubts. Jessica had warned him. "They can be very beguiling, these pre-born. They have tricks you've never even dreamed." Halleck shook his head slowly. And Paul! Gods Below! Paul alive and in league with this question-mark he'd fathered!

The Fremen around them could no longer be held back. They pressed between Halleck and Paul, between Leto and Paul, shoving the two to the background. The air was showered with hoarse questions. "Are you Muad'Dib? Are you truly Muad'Dib? Is it true, what he says? Tell us!"

"You must think of me only as The Preacher," Paul said, pushing against them. "I cannot be Paul Atreides or Muad'Dib, ever again. I'm not Chani's mate or Emperor."

Halleck, fearing what might happen if these frustrated questions found no logical answer, was about to act when Leto moved ahead of him. It was there Halleck first saw an element of the terrible change which had been wrought in Leto. A bull voice roared: "Stand aside!" And Leto moved forward, thrusting adult Fremen right and left, knocking them down, clubbing them with his hands, wrenching knives from their hands by grasping the blades.

In less than a minute, those Fremen still standing were pressed back against the walls in silent consternation. Leto stood beside his father. "When Shai Hulud speaks, you obey," Leto said.

And when a few of the Fremen had started to argue, Leto had torn a corner of rock from the passage wall beside the room's exit and crumbled it in his bare hands, smiling all the while.

"I will tear your sietch down around your faces," he said.

"The Desert Demon," someone whispered.

"And your qanats," Leto agreed. "I will rip them apart. We have not been here, do you hear me?"

Heads shook from side to side in terrified submission.

"No one here has seen us," Leto said. "One whisper from you and I will return to drive you into the desert without water."

Halleck saw hands being raised in the warding gesture, the sign of the worm.

"We will go now, my father and I, accompanied by our old friend," Leto said. "Make our 'thopter ready."

And Leto had guided them to Shuloch then, explaining en route that they must move swiftly because "Farad'n will be here on Arrakis very soon. And, as my father has said, then you'll see the real test, Gurney."

Looking down from the Shuloch butte, Halleck asked himself once more, as he asked every day: "What test? What does he mean?"

But Leto was no longer in Shuloch and Paul refused to answer.

Church and State, scientific rea-

son and faith, the individual and his community, even progress and tradition—all of these can be reconciled in the teachings of Muad'Dib. He taught us that there exist no intransigent opposites except in the beliefs of men. Anyone can rip aside the veil of Time. You can discover the future in the past or in your own imagination. Doing this, you win back your consciousness of your inner being. You know then that the universe is a coherent whole and you are indivisible from it.

—The Preacher at Arrakeen
After Harq al-Ada

Ghanima sat far back outside the circle of light from the spice lamps and watched this Buer Agarves. She didn't like his round face and agitated eyebrows, his way of moving his feet when he spoke, as though his words were a hidden music to which he danced.

He's not here to parley with Stil, Ghanima told herself, seeing this confirmed in every word and movement from this man. She moved away from the Council circle.

Every sietch had a room such as this one, but the meeting hall of the abandoned djedida struck Ghanima as a cramped place because it was so low. Sixty people from Stilgar's band plus the nine who'd come with Agarves filled only one end of the hall. Spice-oil lamps reflected against low beams which supported the ceiling. The light cast wavering shadows which danced on the walls, and the pungent smoke filled the place with the smell of cinnamon.

The meeting had started at dusk after the moisture prayers and evening meal. It had been going on for more than an hour now, and Ghanima couldn't fathom the hidden currents in Agarves' performance. His words appeared clear enough, but his motions and eye movements didn't agree.

Agarves was speaking now, responding to a question from one of Stilgar's lieutenants, a niece of Harah's named Rajia. She was a darkly ascetic young woman whose mouth turned down at the corners giving her an air of perpetual distrust. Ghanima found the expression satisfying in the circumstances.

"Certainly I believe Alia will grant a full and complete pardon to all of you," Agarves said. "I'd not be here with this message otherwise."

Stilgar intervened as Rajia made to speak once more. "I'm not so much worried about our trusting her as I am about whether she trusts you." Stilgar's voice carried growling undertones. He was uncomfortable with this suggestion that he return to his old status.

"It doesn't matter whether she trusts me," Agarves said. "To be candid about it, I don't believe she does. I've been too long searching for you without finding you. But I've always felt she didn't really want you captured. She was . . ."

"She was the wife of the man I slew," Stilgar said. "I grant you that he asked for it. Might just as well've fallen on his own knife. But this new attitude smells of . . ."

Agarves danced to his feet, anger plain on his face. "She forgives you! How many times must I say it? She had the priests make a great show of asking divine guidance from . . ."

"You've only raised another issue." It was Irulan, leaning forward past Rajia, blond head set off against Rajia's darkness. "She has convinced you, but she may have other plans."

"The Priesthood has . . ."

"But there are all of these stories," Irulan said. "That you're more than just a military adviser, that you're her . . ."

"Enough!" Agarves was beside himself with rage. His hand hovered near his knife. Warring emotions moved just below the surface of his skin, twisting his features. "Believe what you will, but I cannot go on with that woman! She fouls me! She dirties everything she touches! I am used. I am soiled. But I have not lifted my knife against my kin. Now—no more!"

Ghanima, observing this, thought: *That, at least, was truth coming out of him.*

Surprisingly, Stilgar broke into laughter. "Ahhhh, cousin," he said. "Forgive me, but there's truth in anger."

"Then you agree?"

"I've not said that." He raised a hand as Agarves threatened another outburst. "It's not for my sake, Buer, but there are these others." He gestured around him. "They are my responsibility. Let us consider for a moment what reparations Alia offers."

"Reparations? There's no word of reparations. Pardon, but no . . ."

"Then what does she offer as surety of her word?"

"Sietch Tabr and you as Naib, full autonomy as a neutral. She understands now how . . ."

"I'll not go back to her entourage or provide her with fighting men," Stilgar warned. "Is that understood?"

Ghanima could hear Stilgar be-

ginning to weaken and thought: *No, Stil! No!*

"No need for that," Agarves said. "Alia wants only Ghanima returned to her and the carrying out of the betrothal promise . . ."

"So now it comes out!" Stilgar said, his brows drawing down. "Ghanima's the price of my pardon. Does she think me . . ."

"She thinks you sensible," Agarves argued, resuming his seat.

Gleefully, Ghanima thought: *He won't do it. Save your breath. He won't do it.*

As she thought this, Ghanima heard a soft rustling behind and to her left. She started to turn, felt powerful hands grab her. A heavy rag reeking of sleep-drugs covered her face before she could cry out. As consciousness faded, she felt herself being carried toward a door in the hall's darkest reaches. And she thought: *I should have guessed! I should've been prepared!* But the hands that held her were adult and strong. She could not squirm away from them.

Ghanima's last sensory impressions were of cold night air, a glimpse of stars and a hooded face which looked down at her, then asked: "She wasn't injured, was she?"

The answer was lost as the stars wheeled and streaked across her gaze, losing themselves in a blaze of light which was the inner core of her selfdom.

Muad'Dib gave us a particular kind of knowledge about prophetic insight, about the behavior which surrounds such insight and its influence upon events which are seen to be "on line." (That is, events which are set to occur in a related system which the prophet reveals and interprets.) As has been noted elsewhere, such insight operates as a peculiar trap for the prophet himself. He can become the victim of what he knows—which is a relatively common human failing. The danger is that those who predict real events may overlook the polarizing effect brought about by overindulgence in their own truth. They tend to forget that nothing in a polarized universe can exist without its opposite being present.

—The Prescient Vision
By Harq al-Ada

Blowing sand hung like fog on the horizon obscuring the rising sun. The sand was cold in the dune shadows. Leto stood outside the ring of the palmyrie looking into the desert. He smelled dust and the aroma of spiny plants, heard the morning sounds of people and animals. The Fremen maintained no qanat in this place. They had only a bare minimum of hand planting irrigated by the women who carried water in skin bags. Their windtrap was a fragile thing, easily destroyed by the stormwinds, but easily rebuilt. Hardship, the rigors of the spice trade and adventure were a

way of life here. These Fremen still believed heaven was the sound of running water, but they cherished an ancient concept of Freedom which Leto shared.

Freedom is a lonely state, he thought.

Leto adjusted the folds of the white robe which covered his living stillsuit. He could feel how the sandtrout membrane had changed him and, as always with this feeling, he was forced to overcome a deep sense of loss. He no longer was completely human. Odd things swam in his blood. Sandtrout cilia had penetrated every organ, adjusting, changing. The sandtrout itself was changing, adapting. But Leto, knowing this, felt himself torn by the old threads of his lost humanity, his life caught in primal anguish with its ancient continuity shattered. He knew the trap of indulging in such emotion, though. He knew it well.

Let the future happen of itself, he thought. *The only rule governing creativity is the act of creation itself.*

It was difficult to take his gaze away from the sands, the dunes—the great emptiness. Here at the edge of the sand lay a few rocks, but they led the imagination outward into the winds, the dust, the sparse and lonely plants and animals, dune merging into dune, desert into desert.

Behind him came the sound of a flute playing for the morning prayer, the chant for moisture which now was a subtly altered serenade to the new Shai Hulud. This knowledge in Leto's mind gave the music a sense of eternal loneliness.

I could just walk away into that desert, he thought.

Everything would change then. One direction would be as good as another. He already had learned to live a life free of possessions. He had refined the Fremen mystique to a terrible edge: everything he took with him was necessary, and that was all he took. But he carried nothing except the robe on his back, the Atreides hawk ring hidden in its folds, and the skin-which-was-not-his-own.

It would be easy to walk away from here.

Movement high in the sky caught his attention: the splayed-gap wingtips identified a vulture. The sight filled his chest with aching. Like the wild Fremen, vultures lived in this land because this was where they were born. They knew nothing better. The desert made them what they were.

Another Fremen breed was coming up in the wake of Muad'Dib and Alia, though. They were the reason he could not let himself walk away into the desert as his father had done. Leto recalled Idaho's words from the early days: "These Fremen! They're magnificently alive. I've never met a greedy Fremen."

There were plenty of greedy Fremen now.

A wave of sadness passed over Leto. He was committed to a course which could change all of that, but at a terrible price. And the management of that course became increasingly difficult as they neared the vortex.

Kralizec, the Typhoon-Struggle, lay ahead . . . but Kralizec or worse would be the price of a misstep.

Voices sounded behind Leto, then the clear piping sound of a child speaking: "Here he is."

The Preacher had come out of the palmyrie led by a child.

Why do I still think of him as The Preacher? Leto wondered.

The answer lay there on the clean tablet of Leto's mind: *Because this is no longer Muad'Dib, no longer Paul Atreides.* The desert had made him what he was. The desert and the jackals of Jacurutu with their overdoses of melange and their constant betrayals. The Preacher was old before his time, old not despite the spice, but because of it.

"They said you wanted to see me now," The Preacher said, speaking as his child guide stopped.

Leto looked at the child of the palmyrie, a person almost as tall as himself with awe tempered by an avaricious curiosity. The young eyes glinted darkly above the child-sized stillsuit mask.

Leto waved a hand. "Leave us."

For a moment, there was rebellion in the child's shoulders, then the awe and native Fremen respect for privacy took over. The child left them.

"You know Farad'n is here on Arrakis?" Leto asked.

"Gurney told me when he flew me down last night."

And The Preacher thought: *How coldly measured his words are. He's like I was in the old days.*

"I face a difficult choice," Leto said.

"I thought you'd already made all the choices."

"We know *that* trap, Father."

The Preacher cleared his throat. The tensions told him how near they were to the shattering crisis. Now, Leto would not be relying on pure vision, but on vision management.

"You need my help?" The Preacher asked.

"Yes. I'm returning to Arrakeen and I wish to go as your guide."

"To what end?"

"Would you preach once more in Arrakeen?"

"Perhaps. There are things I've not said to them."

"You will not come back to the desert, Father."

"If I go with you?"

"Yes."

"I'll do whatever you decide."

"Have you considered? With Farad'n there, your mother will be with him."

"Undoubtedly."

Once more, The Preacher cleared his throat. It was a betrayal of nervousness which Muad'Dib would never have permitted. This flesh had been too long away from the old regimen of self-discipline, his mind too often betrayed into madness by the Jacurutu. And The Preacher thought that perhaps it wouldn't be wise to return to Arrakeen.

"You don't have to go back there with me," Leto said. "But my sister is there and I must return. You could go with Gurney."

"And you'd go to Arrakeen alone?"

"Yes. I must meet Farad'n."

"I will go with you," The Preacher sighed.

And Leto sensed a touch of the old vision madness in The Preacher's manner, wondered: *Has he been playing the prescience game?* No. He'd never go that way again. He knew the trap of a partial commitment. The Preacher's every word confirmed that he had handed over the visions to his son, knowing that everything in this universe had been anticipated.

It was the old polarities which taunted The Preacher now. He had fled from paradox into paradox.

"We'll be leaving in a few minutes, then," Leto said. "Will you tell Gurney?"

"Gurney's not going with us?"

"I want Gurney to survive."

The Preacher opened himself to the tensions then. They were in the air around him, in the ground under his feet, a motile thing which focused onto the non-child who was his son. The blunt scream of his old visions waited in The Preacher's throat.

This cursed holiness!

The sandy juice of his fears could not be avoided. He knew what faced them in Arrakeen. They would play a game once more with terrifying and deadly forces which could never bring them peace.

The child who refuses to travel in the father's harness, this is the symbol of man's most unique capability. "I do not have to be what my father was. I do not have to obey my father's rules or even believe everything he believed. It is my strength as a human that I can make my own choices of what to believe and what not to believe, of what to be and what not to be."

—Leo Atreides II

The Harq al-Ada Biography

Pilgrim women were dancing to drum and flute in the Temple Plaza, no coverings on their heads, bangles at their necks, their dresses thin and revealing. Their long black hair was thrown straight out, then straggled across their faces as they whirled.

Alia looked down at the scene from her Temple aerie, both attracted and repelled. It was midmorning, the hour when the aroma of spice coffee began to waft across the plaza from the vendors beneath

the shaded arches. Soon, she would have to go out and greet Farad'n, present the formal gifts and supervise his first meeting with Ghanima.

It was all working out according to plan. Ghani would kill him and, in the shattering aftermath, only one person would be prepared to pick up the pieces. The puppets danced when the strings were pulled. Stilgar had killed Agarves just as she'd hoped. And Agarves had led the kidnappers to the djedida without knowing it, a secret signal transmitter hidden in the new boots she'd given him. Now, Stilgar and Irulan waited in the Temple dungeons. Perhaps they would die, but there might be other uses for them. There was no harm in waiting.

She noted that Town Fremen were watching the pilgrim dancers below her, their eyes intense and unwavering. A basic sexual equality had come out of the desert to persist in Fremen town and city, but social differences between male and female already were making themselves felt. That, too, went according to plan. Divide and weaken. Alia could sense the subtle change in the way the Town Fremen watched those off-planet women and their exotic dance.

Let them watch. Let them fill their minds with gafla.

The louvers of Alia's window had been opened and she could feel a sharp increase in the heat which began about sunrise in this season and would peak in mid-afternoon. The temperature on the stone floor of the plaza would be much higher. It would be uncomfortable for those dancers, but still they whirled and bent, swung their arms and their hair in the frenzy of their dedication. They had dedicated their dance to Alia, the Womb of Heaven. An aide had come to whisper this to Alia, sneering at the off-world women and their peculiar ways. The aide had explained that the women were from Ix where remnants of the forbidden science and technology remained.

Alia sniffed. Those women were as ignorant, as superstitious and backward as the desert Fremen . . . just as that sneering aide had said, trying to curry favor by reporting the dedication of the dance. And neither the aide nor the Ixians even knew that Ix was merely a number in a forgotten language.

Laughing lightly to herself, Alia thought: *Let them dance.* The dancing wasted energy which might be put to more destructive uses. And the music was pleasant, a thin wailing played against flat tympani from gourd drums and clapped hands.

Abruptly, the music was drowned beneath a roaring of many voices from the plaza's far side. The dancers missed a step, recovered in a brief confusion, but they had lost their sensuous singleness and even

their attention wandered to the far gate of the plaza where a mob could be seen spreading onto the stones like water rushing through the opened valve of a qanat.

Alia stared at that oncoming wave.

She heard words now, and one above all others: "Preacher! Preacher!"

Then she saw him, striding within the first spread of the wave, one hand on the shoulder of his young guide.

The pilgrim dancers gave up their whirling, retired to the terraced steps below Alia. They were joined by their audience, and Alia sensed awe in the watchers. Her own emotion was fear.

How dare he!

She half turned to summon guards, but second thoughts stopped her. The mob already filled the plaza. They could turn ugly if thwarted in their obvious desire to hear the blind visionary.

Alia clenched her fists.

The Preacher! Why was Paul doing this? To half the population, he was a "desert madman" and, therefore, sacred. Others whispered in the bazaars and shops that it must be Muad'Dib. Why else did the Mahdinate let him speak such angry heresy?

Alia could see refugees among the mob, remnants from the abandoned sietches, their robes in tatters. That would be a dangerous place down there, a place where mistakes could be made.

"Mistress?"

The voice came from behind Alia. She turned, saw Zia standing in the arched doorway to the outer chamber. Armed house guards were close behind her.

"Yes, Zia?"

"My Lady, Farad'n is out here requesting audience."

"Here? In my chambers?"

"Yes, My Lady."

"Is he alone?"

"Two bodyguards and the Lady Jessica."

Alia put a hand to her throat, remembering her last encounter with her mother. Times had changed, though. New conditions ruled their relationship.

"How impetuous he is," Alia said. "What reason does he give?"

"He has heard about . . ." Zia pointed to the window over the plaza. "He says he was told you have the best vantage."

Alia frowned. "Do you believe this, Zia?"

"No, My Lady. I think he has heard the rumors. He wants to watch your reaction."

"My mother put him up to this!"

"Quite possibly, My Lady."

"Zia, my dear, I want you to carry out a specific set of very important orders for me. Come here."

Zia approached to within a pace. "My Lady?"

"Have Farad'n, his guards *and* my mother admitted. Then prepare

to bring Ghanima. She is to be accoutered as a Fremen bride in every detail—*complete.*"

"With knife, My Lady?"

"With knife."

"My Lady, that's . . ."

"Ghanima poses no threat to me."

"My Lady, there's reason to believe she fled with Stilgar more to protect him than for any other cause . . ."

"Zia!"

"My Lady?"

"Ghanima already has made her plea for Stilgar's life and Stilgar remains alive."

"But she's the heir presumptive!"

"Just carry out my orders. Have Ghanima prepared. While you're seeing to that, send five attendants from the Temple Priesthood out into the plaza. They're to invite The Preacher up here. Have them wait their opportunity and speak to him, nothing more. They are to use no force. I want them to issue a polite invitation. Absolutely no force. And Zia . . ."

"My Lady?" How sullen she sounded.

"The Preacher and Ghanima are to be brought before me simultaneously. They are to enter together upon my signal. Do you understand?"

"I know the plan, My Lady, but . . ."

"Just do it! Together." And Alia nodded dismissal to the amazon aide. As Zia turned and left, Alia said: "On your way out, send in Farad'n's party, but see that they're preceded by ten of your most trustworthy people."

Zia glanced back, but continued leaving the room. "It will be done as you command, My Lady."

Alia turned away to peer out the window. In just a few minutes, the *plan* would bear its bloody fruit. And Paul would be here when his daughter delivered the coup de grace to his holy pretensions. Alia heard Zia's guard detachment entering. It would be over soon. All over. She looked down with a swelling sense of triumph as The Preacher took his stance on the first step. His youthful guide squatted beside him. Alia saw the yellow robes of Temple Priests waiting on the left, held back by the press of the crowd, but they were experienced with crowds. They'd find a way to approach their target.

The Preacher's voice boomed out over the plaza then and the mob waited upon his words with rapt attention. Let them listen! Soon, his words would be made to mean other things than he intended. And there'd be no *Preacher* around to protest.

She heard Farad'n's party enter, Jessica's voice. "Alia?"

Without turning, Alia said: "Welcome, Prince Farad'n, Mother. Come and enjoy the show." She glanced back then, saw the big Sardaukar, Tyekanik scowling at her guards who were blocking the way.

"But this isn't hospitable," Alia said. "Let them approach." Two of her guards, obviously acting on Zia's orders, came up to her and stood between her and the others. The other guards moved aside. Alia backed to the right side of the window, motioned to it. "This is truly the best vantage point."

Jessica, wearing her traditional black aba robe, glared at Alia, escorted Farad'n to the window, but stood between him and Alia's guards.

"This is very kind of you, Lady Alia," Farad'n said. "I've heard so much about this Preacher."

"And there he is in the flesh," Alia said. She saw that Farad'n wore the dress gray of a Sardaukar commander without decorations. He moved with a lean grace which Alia admired. Perhaps there would be more than idle amusement in this Corrino Prince.

The Preacher's voice boomed into the room over the amplifier pickups beside the window. Alia felt the tremors of it in her bones, began to listen to his words with growing fascination.

"I found myself in the Desert of Zan," The Preacher shouted, "in that waste of howling wilderness. And God commanded me to make that place clean. For we were provoked in the desert, and grieved in the desert, and we were tempted in that wilderness to forsake our ways."

Desert of Zan, Alia thought. That was the name given to the place of the first trial of the Zensunni Wanderers from whom the Fremen sprang. But his words! Was he taking credit for the destruction wrought against the sietch strongholds of the loyal tribes?

"Wild beasts lie upon your lands," The Preacher said, his voice booming across the plaza. "Doleful creatures fill your houses. You who fled your homes no longer multiply your days upon the sand. Yea, you who have forsaken our ways, you will die in a fouled nest if you continue on this path. But if you heed my warning, the Lord shall lead you through a land of pits into the Mountains of God. Yea, Shai Hulud shall lead you."

A moaning susurration arose from the crowd. The Preacher paused, swinging his eyeless sockets from side to side at the sound. Then he raised his arms, spreading them wide, called out: "O God, my flesh longeth for Thy way in a dry and thirsty land!"

An old woman in front of The Preacher, an obvious refugee by the patched and worn look of her garments, held up her hands to him, pleaded: "Help us! Muad'Dib, help us!"

In a sudden fearful constriction of her breast, Alia asked herself if that old woman really knew the truth. Alia glanced at her mother, but Jessica remained unmoving, dividing her attention between Alia's guards, Farad'n and the view from

the window. Farad'n stood rooted in fascinated attention.

Alia glanced out the window, trying to see her Temple priests. They were not in view and she suspected they had worked their way around below her near the Temple doors, seeking a direct route down the steps.

The Preacher pointed his right hand over the old woman's head, shouted: "You are the only help remaining! You were rebellious. You brought the dry wind which does not cleanse nor does it cool. You bear the burden of our desert, and the whirlwind cometh from that place, from that terrible land. I have been in that wilderness. Water runs upon the sand from shattered qanats. Streams cross the ground. Water has fallen from the sky in the Belt of Dune! O my friends, God has commanded me. Make straight in the desert a highway for our Lord, for I am the voice that cometh to thee from the wilderness."

He pointed to the steps beneath his feet, a stiff and quivering finger. "This is no lost djedida which is no more inhabited forever! Here have we eaten the bread of heaven. And here, the noise of strangers drives us from our homes! They breed for us a desolation, a land wherein no man dwelleth, nor any man pass thereby."

The crowd stirred uncomfortably, refugees and Town Fremen peering about, looking at the pilgrims of the Hajj who stood among them.

He could start a bloody riot! Alia thought. *Well, let him. My priests can grab him in the confusion.*

She saw the five priests then, a tight knot of yellow robes working down the steps behind The Preacher.

"The waters which we spread upon the desert have become blood," The Preacher said, waving his arms wide. "Blood upon our land! Behold our desert which could rejoice and blossom; it has lured the stranger and seduced him in our midst. They come for violence! Their faces are closed up as for the last wind of Kralizec! They gather the captivity of the sand. They suck up the abundance of the sand, the treasure hidden in the depths. Behold them as they go forth to their evil work. It is written: 'And I stood upon the sand, and I saw a beast rise up out of that sand, and upon the head of that beast was the name of God!' "

Angry mutterings arose from the crowd. Fists were raised, shaken.

"What is he doing?" Farad'n whispered.

"I wish I knew," Alia said. She put a hand to her breast, feeling the fearful excitement of this moment. The crowd would turn upon the pilgrims if he kept this up!

But The Preacher half turned, aimed his dead sockets toward the Temple and raised a hand to point at the high windows of Alia's aerie. "One blasphemy remains!" he

screamed. "Blasphemy! And the name of that blasphemy is Alia!"

Shocked silence gripped the plaza.

Alia stood in unmoving consternation. She knew the mob could not see her, but she felt overcome by a sense of exposure, of vulnerability. The echoes of calming words within her skull competed with the pounding of her heart. She could only stare down at that incredible tableau. The Preacher remained with a hand pointing at her windows.

His words had been too much for the priests, though. They broke the silence with angry shouts, stormed down the steps, thrusting people aside. As they moved, the crowd reacted, breaking like a wave upon the steps, sweeping over the first lines of onlookers, carrying The Preacher before them. He stumbled blindly, separated from his young guide. Then a yellow-clad arm arose from the press of people; a crysknife was brandished in its hand. She saw the knife strike downward, bury itself in The Preacher's chest.

The thunderous clang of the Temple's giant doors being closed broke Alia from her shock. Guards obviously had closed the doors against the mob. But people already were drawing back, making an open space around a crumpled figure on the steps. An eerie quiet fell over the plaza. Alia saw many bodies, but only this one lay by itself.

Then a voice screeched from the mob: "Muad'Dib! They've killed Muad'Dib!"

"God's below," Alia quavered. "Gods below."

"A little late for that, don't you think?" Jessica asked.

Alia whirled, noting the sudden startled reaction of Farad'n as he saw the rage on her face. "That was Paul they killed!" Alia screamed. "That was your son! When they confirm it, do you know what'll happen?"

Jessica stood rooted for a long moment, thinking that she had just been told something already known to her. Farad'n's hand upon her arm shattered the moment. "My Lady," he said, and there was such compassion in his voice that Jessica thought she might die of it right there. She looked from the cold, glaring anger on Alia's face to the sympathetic misery on Farad'n's features, thought: *Perhaps I did my job too well.*

There could be no doubting Alia's words. Jessica remembered every intonation of The Preacher's voice, hearing her own tricks in it, the long years of instruction she'd spent there upon a young man meant to be Emperor, but who now lay a shattered mound of bloody rags upon the Temple steps.

Gafla blinded me, Jessica thought.

Alia gestured to one of her aides, called: "Bring Ghanima now."

Jessica forced herself into recognizing these words. *Ghanima? Why Ghanima now?*

The aide had turned toward the outer door, motioning for it to be unbarred, but before a word could be uttered, the door bulged. Hinges popped. The bar snapped and the door, a thick plasteel construction meant to withstand terrible energies, toppled into the room. Guards leaped to avoid it, drawing their weapons.

Jessica and Farad'n's bodyguards closed in around the Corrino Prince.

But the opening revealed only two children: Ghanima on the left clad in her white betrothal robe, and Leto on the right, the gray slickness of a stillsuit beneath a desert-stained white robe.

Alia stared from the fallen door to the children, found she was trembling uncontrollably.

"The family here to greet us," Leto said. "Grandmother." He nodded to Jessica, shifted his attention to the Corrino Prince. "And this must be Prince Farad'n. Welcome to Arrakis, Prince."

Ghanima's eyes appeared empty. She held her right hand on a ceremonial crysknife at her waist, and she appeared to be trying to escape from Leto's grip on her arm. Leto shook her arm and her whole body shook with it.

"Behold me, family," Leto said. "I am Ari, the Lion of the Atreides. And here"—again, he shook Ghanima's arm with that powerful ease which set her whole body jerking—"here is Aryeh, the Atreides Lioness. We come to set you onto Secher Nbiw, the Golden Path."

Ghanima, absorbing the trigger words, *Secher Nbiw*, felt the locked-away consciousness flow into her mind. It flowed with a linear nicety, the inner awareness of her mother hovering there behind it, a guardian at a gate. And Ghanima knew in that instant she had conquered the clamorous past. She possessed a gate through which she could peer when she needed that past. The months of self-hypnotic suppression had built for her a safe place from which to manage her own flesh. She started to turn toward Leto with the need to explain this when she became aware of where she stood and with whom.

Leto released her arm.

"Did our plan work?" Ghanima whispered.

"Well enough," Leto said.

Recovering from her shock, Alia shouted at a clump of guards on her left: "Seize them!"

But Leto bent, took the fallen door with one hand, skidded it across the room into the guards. Two were pinned against the wall. The others fell back in terror. That door weighed half a metric ton and this child had thrown it.

Alia, growing aware that the corridor beyond the doorway contained fallen guards, realized that

Leto must have dealt with them, that this child had shattered her impregnable door.

Jessica, too, had seen the bodies, seen the awesome power in Leto and had made similar assumptions, but Ghanima's words touched a core of Bene Gesserit discipline which forced Jessica to maintain her composure. This grandchild spoke of a plan.

"What plan?" Jessica asked.

"The Golden Path, our Imperial plan for our Imperium," Leto said. He nodded to Farad'n. "Don't think harshly of me, Cousin. I act for you, as well. Alia hoped to have Ghanima slay you. I'd rather you lived out your life in some degree of happiness."

Alia screamed at her guards cowering in the passage: "I command you to seize them!"

But they refused to enter the room.

"Wait for me here, Sister," Leto said. "I have a disagreeable task to perform." He moved across the room toward Alia.

She backed away from him into a corner, crouched and drew her knife. The green jewels of its handle flashed in the light from the window.

Leto merely continued his advance, hands empty, but spread and ready.

Alia lunged with the knife.

Leto leaped almost to the ceiling, struck with his left foot. It caught Alia's head a glancing blow and sent her sprawling with a bloody mark on her forehead. She lost her grip on the knife and it skidded across the floor. Alia scrambled after the knife, but found Leto standing in front of her.

Alia hesitated, called up everything she knew of Bene Gesserit training. She came off the floor, body loose and poised.

Once more, Leto advanced upon her.

Alia feinted to the left but her right shoulder came up and her right foot shot out in a toe-pointing kick which could disembowel a man if it struck precisely.

Leto caught the blow on his arm, grabbed the foot and picked her up by it, swinging her around his head. The speed with which he swung her sent a flapping, hissing sound through the room as her robe beat against her body.

The others ducked away.

Alia screamed and screamed, but still she continued to swing around and around and around. Presently, she fell silent.

Slowly, Leto reduced the speed of her whirling, dropped her gently to the floor. She lay in a panting bundle.

Leto bent over her. "I could've thrown you through a wall," he said. "Perhaps that would've been best, but we're now at the center of the struggle. You deserve your chance."

Alia's eyes darted wildly from side to side.

"I have conquered those inner lives," Leto said. "Look at Ghani. She, too, can . . ."

Ghanima interrupted: "Alia, I can show you . . ."

"No!" The word was wrenched from Alia. Her chest heaved and voices began to pour from her mouth. They were disconnected, cursing, pleading. "You see! Why didn't you listen?" And again: "Why're you doing this? What's happening?" And another voice: "Stop them! Make them stop!"

Jessica covered her eyes, felt Farad'n's hand steady her.

Still, Alia raved: "I'll kill you!" Hideous curses erupted from her. "I'll drink your blood!" The sounds of many languages began to pour from her, all jumbled and confused.

The huddled guards in the outer passage made the sign of the worm, then held clenched fists beside their ears. She was possessed!

Leto stood, shaking his head. He stepped to the window and with three swift blows shattered the supposedly unbreakable crystal-reinforced glass from its frame.

A sly look came over Alia's face. Jessica heard something like her own voice come from the twisting mouth, a parody of Bene Gesserit control. "All of you! Stay where you are!"

Jessica, lowering her hands, found them damp with tears.

Alia rolled to her knees, lurched to her feet.

"Don't you know who I am?" she demanded. It was her old voice, the sweet and lilting voice of the youthful Alia who was no more. "Why're you all looking at me that way?" She turned pleading eyes to Jessica. "Mother, make them stop it."

Jessica could only shake her head from side to side, consumed by ultimate horror. All of the old Bene Gesserit warnings were true. She looked at Leto and Ghani standing side by side near Alia. What did those warnings mean for those poor twins?

"Grandmother," Leto said, and there was pleading in his voice. "Must we have a Trial of Possession?"

"Who are you to speak of trial?" Alia asked, and her voice was that of a querulous man, an autocratic and sensual man far gone in self-indulgence.

Both Leto and Ghanima recognized the voice. The old Baron Harkonnen. Ghanima heard the same voice begin to echo in her own head, but the inner gate closed and she sensed her mother standing there.

Jessica remained silent.

"Then the decision is mine," Leto said. "And the choice is yours, Alia. Trial of Possession or . . ." He nodded toward the open window.

"Who're you to give me a choice?" Alia demanded and it was still the voice of the old Baron.

"Demon!" Ghanima screamed. "Let her make her own choice!"

"Mother," Alia pleaded in her little-girl tones. "Mother, what're they doing? What do you want me to do? Help me."

"Help yourself," Leto ordered and, for just an instant, he saw the shattered presence of his aunt in her eyes, a glaring hopelessness which peered out at him and was gone. But her body moved, a stick-like, thrusting walk. She wavered, stumbled, veered from her path but returned to it, nearer and nearer the open window.

Now, the voice of the old Baron raged from her lips: "Stop! Stop it, I say! I command you! Stop it! Feel this!" Alia clutched her head, stumbled closer to the window. She had the sill against her thighs then, but the voice still raved. "Don't do this! Stop it and I'll help you. I have a plan. Listen to me. Stop it, I say. Wait!" But Alia pulled her hands away from her head, clutched the broken casement. In one jerking motion, she pulled herself over the sill and was gone. Not even a screech came from her as she fell.

In the room, they heard the crowd shout, the sodden thump as Alia struck the steps far below.

Leto looked at Jessica. "We told you to pity her."

Jessica turned and buried her face in Farad'n's tunic.

The assumption that a whole system can be made to work better through an assault on its conscious elements betrays a dangerous ignorance. This has often been the ignorant approach of those who call themselves scientists and technologists.

—The Butlerian Jihad
By Harq al-Ada

"He runs at night, Cousin," Ghanima said. "He runs. Have you seen him run?"

"No," Farad'n said.

He waited with Ghanima outside the small audience hall of the Keep where Leto had called them to attend. Tyekanik stood at one side, uncomfortable with the Lady Jessica, who appeared withdrawn, as though her mind lived in another place. It was hardly an hour past the morning meal, but already many things had been set moving—a summons to the Guild, messages to CHOAM and the Landsraad.

Farad'n found it difficult to understand these Atreides. The Lady Jessica had warned him, but still the reality of them puzzled him. They still talked of the betrothal, although most political reasons for it seemed to have dissolved. Leto would assume the throne; there appeared little doubt of that. His odd *living skin* would have to be removed, of course . . . but, in time . . .

"He runs to tire himself," Ghanima said. "He's Kralizec embodied. No wind ever ran as he runs. He's a blur atop the dunes.

I've seen him. He runs and runs. And when he has exhausted himself at last, he returns and rests his head in my lap. 'Ask our mother within to find a way for me to die,' he pleads."

Farad'n stared at her. In the week since the riot in the plaza, the Keep had moved to strange rhythms, mysterious comings and goings; stories of bitter fighting beyond the Shield Wall came to him through Tyekanik, whose military advice had been asked.

"I don't understand you," Farad'n said. "Find a way for him to die?"

"He asked me to prepare you," Ghanima said. Not for the first time, she was struck by the curious innocence of this Corrino Prince. Was that Jessica's doing, or something born in him?

"For what?"

"He's no longer human," Ghanima said. "Yesterday, you asked when he was going to remove the *living skin?* Never. It's part of him now and he's part of it. Leto estimates he has perhaps four thousand years before metamorphosis destroys him."

Farad'n tried to swallow in a dry throat.

"You see why he runs?" Ghanima asked.

"But if he'll live so long and be so . . ."

"Because the memory of being human is so rich in him. Think of all those lives, Cousin. No. You can't imagine what that is because you've no experience of it. But I know. I can imagine his pain. He gives more than anyone ever gave before. Our father walked into the desert trying to escape it. Alia became Abomination in fear of it. Our grandmother has only the blurred infancy of this condition, yet must use every Bene Gesserit wile to live with it—which is what Reverend Mother training amounts to anyway. But Leto! He's all alone, never to be duplicated."

Farad'n felt stunned by her words. Emperor for four thousand years?

"Jessica knows," Ghanima said, looking across at her grandmother. "He told her last night. He called himself the first truly long-range planner in human history."

"What . . . does he plan?"

"The Golden Path. He'll explain it to you later."

"And he has a role for me in this . . . plan?"

"As my mate," Ghanima said. "He's taking over the Sisterhood's breeding program. I'm sure my grandmother told you about the Bene Gesserit dream for a male Reverend with extraordinary powers. He's . . ."

"You mean we're just to be . . ."

"Not *just.*" She took his arm, squeezed it with a warm familiarity. "He'll have many very responsible tasks for both of us. When we're not producing children, that is."

"Well, you're a little young yet," Farad'n said, disengaging his arm.

"Don't ever make that mistake again," she said. There was ice in her tone.

Jessica came up to them with Tyekanik.

"Tyek tells me the fighting has spread off-planet," Jessica said. "The Central Temple on Biarek is under siege."

Farad'n thought her oddly calm in this statement. He'd reviewed the reports with Tyekanik during the night. A wildfire of rebellion was spreading through the Empire. It would be put down, of course, but Leto would have a sorry Empire to restore.

"Here's Stilgar now," Ghanima said. "They've been waiting for him." And once more, she took Farad'n's arm.

The old Fremen Naib had entered by the far door escorted by two former Death Commando companions from the desert days. All were dressed in formal black robes with white piping and yellow headbands for mourning. They approached with steady strides, but Stilgar kept his attention on Jessica. He stopped in front of her, nodded warily.

"You still worry about the death of Duncan Idaho," Jessica said. She didn't like this caution in her old friend.

"Reverend Mother," he said.

So it's going to be that way! Jessica thought. *All formal and according to the Fremen code with blood difficult to expunge.*

She said: "By our view, you but played a part which Duncan assigned you. Not the first time a man has given his life for the Atreides. Why do they do it, Stil? You've been ready for it more than once. Why? Is it that you know how much the Atreides give in return?"

"I'm happy you seek no excuse for revenge," he said. "But there are matters I must discuss with your grandson. These matters may separate us from you forever."

"You mean Tabr will not pay him homage?" Ghanima asked.

"I mean I reserve my judgment." He looked coldly at Ghanima. "I don't like what my Fremen have become," he growled. "We will go back to the old ways. Without you if necessary."

"For a time, perhaps," Ghanima said. "But the desert is dying, Stil. What'll you do when there are no more worms, no more desert?"

"I don't believe it!"

"Within one hundred years," Ghanima said, "there'll be fewer than fifty worms and those will be sick ones kept in a carefully managed reservation. Their spice will be for the Spacing Guild only, and the price . . ." She shook her head. "I've seen Leto's figures. He's been all over the planet. He knows."

"Is this another trick to keep the Fremen as your vassals?"

"When were you ever my vassal?" Ghanima asked.

Stilgar scowled. No matter what he said or did, these twins always made it his fault!

"Last night, he told me about this Golden Path," Stilgar blurted. "I don't like it!"

"That's odd," Ghanima said, glancing at her grandmother. "Most of the Empire will welcome it."

"Destruction of us all," Stilgar muttered.

"But everyone longs for the Golden Age," Ghanima said. "Isn't that so, Grandmother?"

"Everyone," Jessica agreed.

"They long for the Pharaonic Empire which Leto will give them," Ghanima said. "They long for a rich peace with abundant harvests, plentiful trade, a leveling of all except the Golden Ruler."

"It'll be the death of the Fremen!" Stilgar protested.

"How can you say that? Will we not need soldiers and brave men to remove the occasional dissatisfaction? Why, Stil, you and Tyek's brave companions will be hard-pressed to do the job."

Stilgar looked at the Sardaukar officer and a strange light of understanding passed between them.

"And Leto will control the spice," Jessica reminded them.

"He'll control it absolutely," Ghanima said.

Farad'n, listening with the new awareness which Jessica had taught him, heard a set piece, a prepared performance between Ghanima and her grandmother.

"Peace will endure and endure and endure," Ghanima said. "Memory of war will all but vanish. Leto will lead humankind through that garden for at least four thousand years."

Tyekanik glanced questioningly at Farad'n, cleared his throat.

"Yes, Tyek?" Farad'n said.

"I'd speak privately with you, My Prince."

Farad'n smiled, knowing the question in Tyekanik's military mind, knowing that at least two others present also recognized this question. "I'll not sell the Sardaukar," Farad'n said.

"No need," Ghanima said.

"Do you listen to this child?" Tyekanik demanded. He was outraged. The old Naib there understood the problems being raised by all of this plotting, but nobody else knew a damned thing!

Ghanima smiled grimly, said: "Tell him, Farad'n."

Farad'n sighed. It was easy to forget the strangeness of this child who was not a child. He could imagine a lifetime married to her, the hidden reservations on every intimacy. It was not a totally pleasant prospect, but he was beginning to recognize its inevitability. Absolute control of dwindling spice supplies! Nothing would move in the universe without the spice.

"Later, Tyek," Farad'n said.

"But . . ."

"Later, I said!" For the first time, he used Voice on Tyekanik, saw the man blink with surprise and remain silent.

A tight smile touched Jessica's mouth.

"He talks of peace and death in the same breath," Stilgar muttered. "Golden Age!"

Ghanima said: "He'll lead humans through the cult of death into the free air of exuberant life! He speaks of death because that's necessary, Stil. It's a tension by which the living know they're alive. When his Empire falls . . . Oh, yes, it'll fall. You think this is Kralizec now, but Kralizec is yet to come. And when it comes, humans will have renewed their memory of what it's like to be alive. The memory will persist as long as there's a single human living. We'll go through the crucible once more, Stil. And we'll come out of it. We always arise from our own ashes. Always."

Farad'n, hearing her words, understood now what she'd meant in telling him about Leto running. He'll not be human.

Stilgar was not yet convinced. "No more worms," he growled.

"Oh, the worms will come back," Ghanima assured him. "All will be dead within two hundred years, but they'll come back."

"How . . ." Stilgar broke off.

Farad'n felt his mind awash in revelation. He knew what Ghanima would say before she spoke.

"The Guild will barely make it through the lean years and only then because of its stockpiles and ours," Ghanima said. "But there'll be abundance after Kralizec. The worms will return after my brother goes into the sand."

As with so many other religions, Muad'Dib's Golden Elixir of Life degenerated into external wizardry. Its mystical signs became mere symbols for deeper psychological processes and those processes, of course, ran wild. What they needed was a living god, and they didn't have one, a situation which Muad'Dib's son has corrected.

—Saying attributed to Lu Tung-pin
(Lu, The Guest of the Cavern)

Leto sat on the Lion Throne to accept the homage of the tribes. Ghanima stood beside him, one step down. The ceremony in the Great Hall went on for hours. Tribe after Fremen tribe passed before him through their delegates and their Naibs. Each group bore gifts fitting for a god of terrifying powers, a god of vengeance who promised them peace.

He'd cowed them into submission the previous week, performing for the assembled Arifa of all the tribes. The Judges had seen him walk through a pit of fire, emerging unscathed to demonstrate that his skin bore no marks by asking them to study him closely. He'd ordered them to strike him with knives, and the impenetrable skin had sealed his face while they

struck at him to no avail. Acids ran off him with only the lightest mist of smoke. He'd eaten their poisons and laughed at them.

At the end, he'd summoned a worm and stood facing them at its mouth. He'd moved from that to the landing field of Arrakeen where he'd brazenly toppled a Guild frigate by lifting one of its landing fins.

The Arifa had reported all of this with a fearful awe, and now the tribal delegates had come to seal their submission.

The vaulted space of the Great Hall with its acoustical dampening systems tended to absorb sharp noises, but a constant susurration of moving feet insinuated itself into the senses, riding on dust and the flint odors brought in from the open.

Jessica, who'd refused to attend, watched from a high spy hole behind the throne. Her attention was caught by Farad'n and the realization that both she and Farad'n had been outmaneuvered. Of course Leto and Ghanima had anticipated the Sisterhood! The twins could consult within themselves a host of Bene Gesserits greater than all now living in the Empire.

She was particularly bitter at the way the Sisterhood's mythology had trapped Alia. *Fear built on fear!* The habits of generations had imprinted the fate of Abomination upon her. Alia had known no hope. Of course she'd succumbed. Her fate made the accomplishment of Leto and Ghanima even more difficult to face. Not one way out of the trap, but two. Ghanima's victory over the inner lives and her insistence that Alia deserved only pity were the bitterest things of all. Hypnotic suppression under stress linked to the wooing of a benign ancestor had saved Ghanima. They might have saved Alia. But without hope, nothing had been attempted until it was too late. Alia's water had been poured upon the sand.

Jessica sighed, shifted her attention to Leto on the throne. A giant canopic jar containing the water of Muad'Dib occupied a place of honor at his right elbow. He'd boasted to Jessica that his father-within laughed at this gesture even while admiring it.

That jar and the boasting had firmed her resolve not to participate in this ritual. As long as she lived, she knew she could never accept Paul speaking through Leto's mouth. She rejoiced that House Atreides had survived, but the things-that-might-have-been were beyond bearing.

Farad'n sat cross-legged beside the jar of Muad'Dib's water. It was the position of the Royal Scribe, an honor newly conferred and newly accepted.

Farad'n felt that he was adjusting nicely to these new realities, although Tyekanik still raged and promised dire consequences. Tyekanik and Stilgar had formed a

partnership of distrust which seemed to amuse Leto.

In the hours of the homage ceremony, Farad'n had gone from awe to boredom to awe. They were an endless stream of humanity, these peerless fighting men. Their loyalty renewed to the Atreides on the throne could not be questioned. They stood in submissive terror before him, completely daunted by what the Arifa had reported.

At last it drew to a close. The final naib stood before Leto—Stilgar in the "rearguard position of honor." Instead of panniers heavy with spice, fire jewels or any of the other costly gifts which lay in mounds around the throne, Stilgar bore a headband of braided spice fiber. The Atreides hawk had been worked in gold and green into its design.

Ghanima recognized it and shot a sidewise glance at Leto.

Stilgar placed the headband on the second step below the throne, bowed low. "I give you the headband worn by your sister when I took her into the desert to protect her," he said.

Leto suppressed a smile.

"I know you've fallen on hard times, Stilgar," Leto said. "Is there something here you would have in return?" He gestured at the piles of costly gifts.

"No, My Lord."

"I accept your gift then," Leto said. He rocked forward, brought up the hem of Ghanima's robe, ripped a thin strip from it. "In return, I give you this bit of Ghanima's robe, the robe she wore when she was stolen from your desert camp, forcing me to save her."

Stilgar accepted the cloth in a trembling hand. "Do you mock me, My Lord?"

"Mock you? By my name, Stilgar, never would I mock you. I have given you a gift without price. I command you to carry it always next to your heart as a reminder that all humans are prone to error and all leaders are human."

A thin chuckle escaped Stilgar. "What a Naib you would have made!"

"What a Naib I am! Naib of Naibs. Never forget that!"

"As you say, My Lord." Stilgar swallowed, remembering the report of his Arifa. And he thought: Once I thought of slaying him. Now it's too late. His glance fell on the jar, a graceful opaque gold capped with green. "That is water of my tribe."

"And mine," Leto said. "I command you to read the inscription upon its side. Read it aloud that all may hear it."

Stilgar cast a questioning glance at Ghanima, but she returned it with a lift of her chin, a cold response which sent a chill through him. Were these Atreides imps bent on holding him to answer for his impetuosity and his mistakes?

"Read it," Leto said, pointing.

Slowly, Stilgar mounted the

steps, bent to look at the jar. Presently, he read aloud: " 'This water is the ultimate essence, a source of outward streaming creativity. Though motionless, this water is the means of all movement.'

"What does it mean, My Lord?" Stilgar whispered. He felt awed by the words, touched within himself in a place he could not understand.

"The body of Muad'Dib is a dry shell like that abandoned by an insect," Leto said. "He mastered the inner world while holding the outer in contempt and this led to catastrophe. He mastered the outer world while excluding the inner world, and this delivered his descendants to the demons. The Golden Elixir will vanish from Dune, yet Muad'Dib's seed goes on, he goes on, and his water moves our universe."

Stilgar bowed his head. Mystical things always left him in turmoil.

"The beginning and the end are one," Leto said. "You live in air but do not see it. A phase has closed. Out of that closing grows the beginning of its opposite. Thus, we will have Kralizec. Everything returns later in changed form. You have felt thoughts in your head; your descendants will feel thoughts in their bellies. Return to Sietch Tabr, Stilgar. Gurney Halleck will join you there as my adviser in your Council."

"Don't you trust me, My Lord?" Stilgar's voice was low.

"Completely, else I'd not send Gurney to you. He'll begin recruiting the new force we'll need soon. I accept your pledge of fealty, Stilgar. You are dismissed."

Stilgar bowed low, backed off the steps, turned and left the hall. The other Naibs fell into step behind him according to the Fremen principle that "the last shall be first." But some of their queries could be heard on the throne as they departed.

"What were you talking about up there, Stil? What does that mean, those words on Muad'Dib's water?"

Leto spoke to Farad'n. "Did you get all of that, Scribe?"

"Yes, My Lord."

"My grandmother tells me she trained you well in the mnemonic processes of the Bene Gesserit. That's good. I don't want you scribbling beside me."

"As you command, My Lord."

"Come and stand before me," Leto said.

Farad'n obeyed, more than ever thankful for Jessica's training. When you accepted the fact that Leto no longer was human, no longer could think as humans thought, the course of his Golden Path became ever more frightening.

Leto looked up at Farad'n. The guards stood well back out of earshot. Only the counselors of the Inner Presence remained on the floor of the Great Hall, and they stood in subservient groups well beyond the first step. Ghanima had moved

closer to rest an arm on the back of the throne.

"You've not yet agreed to give me your Sardaukar," Leto said. "But you will."

"I owe you much, but not that," Farad'n said.

"You think they'd not mate well with my Fremen?"

"As well as those new friends, Stilgar and Tyekanik."

"Yet you refuse?"

"I await your offer."

"Then I must make the offer, knowing you will never repeat it. I pray my grandmother has done her part well, that you are prepared to understand."

"What must I understand?"

"There's always a prevailing mystique in any civilization," Leto said. "It builds itself as a barrier against change and that always leaves future generations unprepared for the universe's treachery. All mystiques are the same in building these barriers—the religious mystique, the hero-leader mystique, the messiah mystique, the mystique of science/technology and the mystique of nature itself. We live in an Imperium which such a mystique has shaped and now that Imperium is falling apart because most people don't distinguish between the mystique and their universe. You see, the mystique is like demon possession; it tends to take over the consciousness, becoming all things to the observer."

"I recognize your grandmother's wisdom in these words," Farad'n said.

"Well and good, Cousin. She asked me if I were Abomination. I answered in the negative. That was my first treachery. You see, Ghanima escaped this, but I did not. I was forced to balance the inner lives under the pressure of excessive melange. I had to seek the active cooperation of those aroused lives within me. Doing this, I avoided the most malignant and chose a dominant helper thrust upon me by the inner awareness which was my father. I am not, in truth, my father or this helper. Then again, I am not the Second Leto."

"Explain."

"You have an admirable directness," Leto said. "I'm a community dominated by one who was ancient and surpassingly powerful. He fathered a dynasty which endured for three thousand of our years. His name was Harum and, until his line trailed out in the congenital weaknesses and superstitions of a descendant, his subjects lived in a rhythmic sublimity. They moved unconsciously with the changes of the seasons. They bred individuals who tended to be short-lived, superstitious and easily led by a god-king. Taken as a whole, they were a powerful people. Their survival as a species became habit."

"I don't like the sound of that," Farad'n said.

"Nor do I, really," Leto said. "But it's the universe I will create."

"Why?"

"It's a lesson I learned on Dune. We kept the presence of death a dominant specter among the living here. By that presence, the dead changed the living. The people of such a society sink down into their bellies. But when the time comes for the opposite, when they arise, they are great and beautiful."

"That doesn't answer my question," Farad'n protested.

"You don't trust me, Cousin."

"Nor does your own grandmother."

"And with good reason," Leto said. "But she acquiesces because she must. Bene Gesserits are pragmatists in the end. I share their view of our universe, you know. You wear the marks of that universe. You retain the habits of rule, cataloging all around you in terms of their possible threat or valve."

"I agreed to be your scribe."

"It amused you and flattered your real talent, which is that of historian. You've a definite genius for reading the present in terms of the past. You've anticipated me on several occasions."

"I don't like your veiled insinuations," Farad'n said.

"Good. You come from infinite ambition to your present lowered estate. Didn't my grandmother warn you about infinity? It attracts us like a floodlight in the night, blinding us to the excesses it can inflict upon the finite."

"Bene Gesserit aphorisms!" Farad'n protested.

"But much more precise," Leto said. "The Bene Gesserit believed they could predict the course of evolution. But they overlooked their own changes in the course of that evolution. They assumed they would stand still while their breeding plan evolved. I have no such reflexive blindness. Look carefully at me, Farad'n, for I am no longer human."

"So your sister assures me." Farad'n hesitated, then: "Abomination?"

"By the Sisterhood's definition, perhaps. Harum is cruel and autocratic. I partake of his cruelty. Mark me well: I have the cruelty of the husbandman, and this human universe is my farm. Fremen once kept tame eagles as pets, but I'll keep a tame Farad'n."

Farad'n's face darkened. "Beware my claws, Cousin. I well know my Sardaukar would fall in time before your Fremen. But we'd wound you sorely and there are jackals waiting to pick off the weak."

"I will use you well, that I promise," Leto said. He leaned forward. "Did I not say I'm no longer human? Believe me, Cousin. No children will spring from my loins for I no longer have loins. And this forces my second treachery."

Farad'n waited in silence, seeing

at last the direction of Leto's argument.

"I shall go against every Fremen precept," Leto said. "They will accept because they can do nothing else. I kept you here under the lure of a betrothal, but there will be no bethrothal of you and Ghanima. My sister will marry me!"

"But you . . ."

"Marry, I said. Ghanima must continue the Atreides line. There's also the matter of the Bene Gesserit breeding program, which is now my breeding program."

"I refuse," Farad'n said.

"You refuse to father an Atreides dynasty?"

"What dynasty? You'll occupy the throne for thousands of years."

"And mold your descendants in my image. It will be the most intensive, the most inclusive training program in all of history. We'll be an ecosystem in miniature. You see, whatever system animals choose to survive by must be based on the pattern of interlocking communities, interdependence, working together in the common design which is the system. And this system will produce the most knowledgeable rulers ever seen."

"You put fancy words on a most distasteful . . ."

"Who will survive Kralizec?" Leto asked. "I promise you, Kralizec will come."

"You're a madman! You will shatter the Empire."

"Of course I will . . . and I'm not a man. But I'll create a new consciousness in all men. I tell you that below the desert of Dune there's a secret place with the greatest treasure of all time. I do not lie. When the last worm dies and the last melange is harvested upon our sands, these deep treasures will spring up throughout our universe. As the power of the spice monopoly fades and the hidden stockpiles make their mark, new powers will appear throughout our realm. It is time humans learned once more to live in their instincts."

Ghanima took her arm from the back of the throne, crossed to Farad'n's side, took his hand.

"As my mother was not wife, you will not be husband," Leto said. "But perhaps there will be love and that will be enough."

"Each day, each moment brings its change," Ghanima said. "One learns by recognizing the moments."

Farad'n felt the warmth of Ghanima's tiny hand as an insistent presence. He recognized the ebb and flow of Leto's arguments, but not once had Voice been used. It was an appeal to the guts, not to the mind.

"Is this what you offer for my Sardaukar?" he asked.

"Much, much more, cousin. I offer your descendants the Imperium. I offer you peace."

"What will be the outcome of your peace?"

"Its opposite," Leto said, his voice calmly mocking.

Farad'n shook his head. "I find the price for my Sardaukar very high. Must I remain Scribe, the secret father of your Royal line?"

"You must."

"Will you try to force me into your habit of peace?"

"I will."

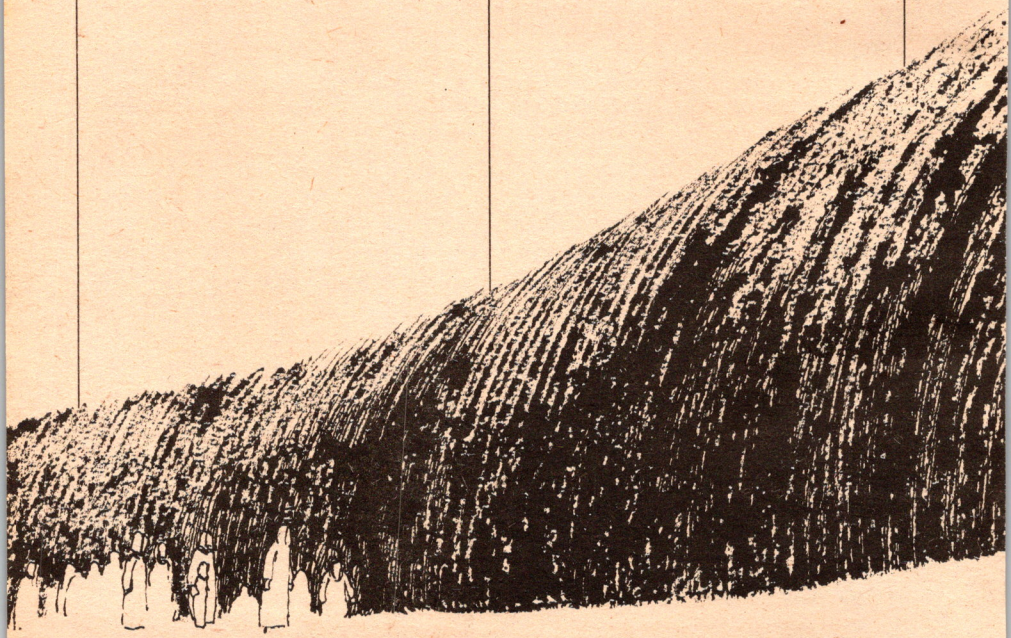
"I'll resist you every day of my life."

"But that's the function I expect of you, Cousin. It's why I chose you. I'll make it official. I will give you a new name. From this moment, you'll be called Breaking of The Habit, which in our tongue is Harq al-Ada. Come, Cousin, don't be obtuse. My mother taught you well. Give me your Sardaukar."

"Give them," Ghanima echoed. "He'll have them one way or another."

Farad'n heard fear for himself in her voice. Love, then? Leto asked not for reason, but for an intuitive leap. "Take them," Farad'n said.

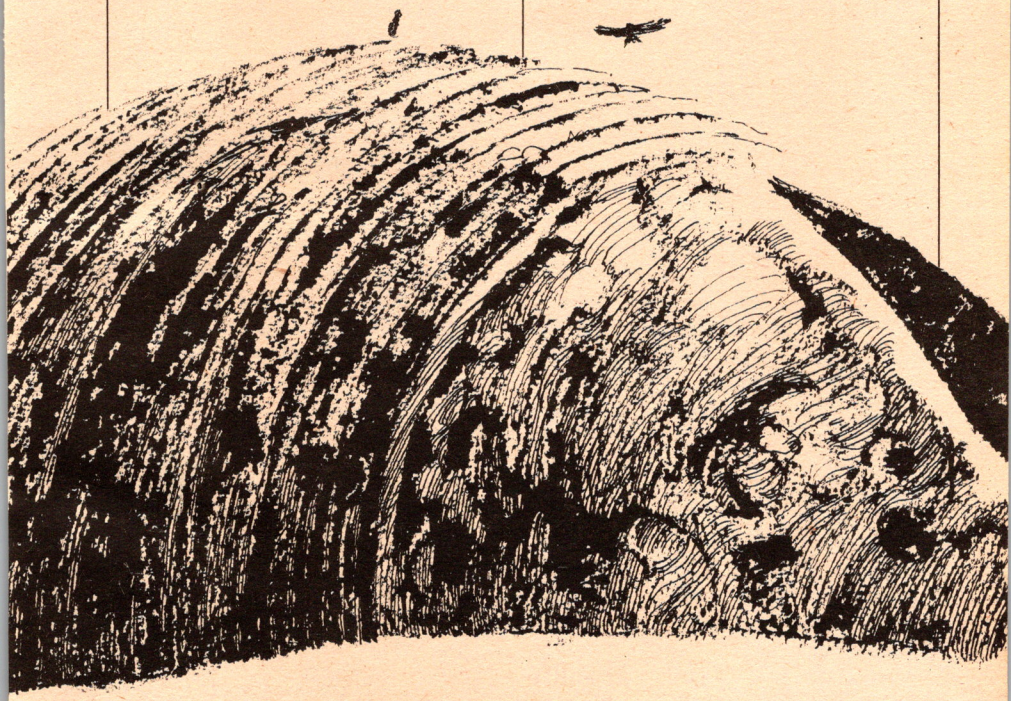
"Indeed," Leto said. He lifted himself from the throne, a curiously fluid motion as though he kept his terrible powers under most



delicate control. Leto stepped down then to Ghanima's level, moved her gently until she faced away from him, turned and placed his back against hers. "Note this, Cousin Harq al-Ada. This is the way it will always be with us. We'll stand thus when we are married. Back to back, each looking outward from the other to protect the one thing which we have always been. He turned, looked mockingly at Farad'n, lowered his voice: "Remember that, Cousin, when you're face to face with my Ghanima. Remember that when you whisper of love and soft things, when you are most tempted by the habits of my peace and my contentment. Your back will remain exposed."

Turning from them, he strode down the steps into the waiting courtiers, picked them up in his wake like satellites and left the hall.

Ghanima once more took Farad'n's hand, but her gaze looked beyond the far end of the hall long after Leto had left it. "One of us had to accept the agony," she said, "and he was always the stronger." ■



the reference library

Lester del Rey

THE LAMP OF EXPERIENCE

For a science fiction writer—or any other writer—a little knowledge is a damned good thing. More is even better. And the personalized, immediate knowledge that comes to those who can learn from experience is best of all.

This is not meant to denigrate either imagination or the less personal type of knowledge obtained from vicarious experience gained from the accounts of others or from reading and studying. In our field, necessity demands imagining a great deal. Nobody, so far as I know, has flown faster than light or lived on another planet; nor am I aware of anyone who has tried immortality long enough to give a cogent report on it. And while some people have told me they are telepaths, I've yet to see convincing proof of it.

Reading also serves a useful place. Books can supply the basic facts of physics, biochemistry, and other factual material needed in science fiction. If the writer can consult primary source material, that is the best way to develop some background. Reading other science fiction is perhaps the worst; too many writers exist who admit—or even boast—that they don't understand science. There is no profit in imitating an idea that was wrong to begin with. And a popular book about black holes may be almost as bad; for that, some knowledge of general relativity and mathematics is necessary.

In the long run, however, experience gives the truest color to fiction. Reading can only supply what some other writer thought of life. And even science fiction involves an understanding of life. Only when a man has actually had his nose smashed and his body beaten, and when he's suffered the growing, throbbing ache for hours afterward, will he be able to judge how much repeated punishment his hero can take. If he's never so much as worked in his local political club, he'll pick up all the silly mistakes of newspapers and books, and it will all ring false. And if he hasn't lived in close association with a cross-section of society, he isn't going to be significant in writing about any social matrix; he can describe characters, but he can't make them felt unless he has a wide-ranging experience of his own with all types of people.

That is demonstrated unfortu-

nately by too many writers today. They've learned about writing, not about the subjects of writing. They've learned from teachers, who rarely have any wide experience with general life. They've read all about adolescents coming of age and the classics that rarely delve into the activities that make up most of life. They've associated mostly with people of the same student background and outlook. Then when they become writers, they find another creche by associating mostly with other writers. They have too damned little experience to know how empty their deep messages and significant "insights" are.

Imagination can work wonders in devising plots (often from other plots) and supplying details. But effective imagination requires a background of facts and experience. It can never throw more spots then there are stored on the dice. Imagination raised in a creche may be wonderful—but it will be limited to creche situations and characters. Reading can remedy that to a degree—but that limits the imagination to shuffling the ideas of other writers, without significant insight of its own.

Hence, it's nice to pick up a book which is written by someone who has some degree of experience in the fields he explores.

One such book is **The Prometheus Crisis,** by Thomas N. Scortia and Frank M. Robinson (Doubleday, 321 pp., $8.95). This is a book about technology under politics and the human cussedness that always gets into such situations. Scortia spent several years being involved deeply in the politics and technology of a large government project, and he knows what it feels like to be an engineer in such a situation. Robinson has had more than ample experience with a great many forms of human cussedness. Their experience shows throughout. This is a novel of real significance and relevance—and one backed up by every effort on the part of the writers to develop the maximum knowledge possible about the subject before writing it.

The basic subject—what happens when an atomic power plant breaks down—has received a lot of attention recently in fact and fiction. This is the only fiction about it which I've found to be convincing. It's a good piece of fiction, marvelously well worked out. Of all the nearby-future disaster books I've read, it's the most honest, least contrived, and all around best.

The story is told mostly from the view of Parks, the plant engineer responsible for the construction and initial operation of the biggest atomic power plant yet built somewhere in the near future. It's a rush job, since a growing shortage of power has made the President announce that it will be shortly in operation to relieve the risk of nationwide blackouts—and to help him get elected. Parks knows that material for the plant has not been properly tested, that there have been failures already in the tests made, and that things are right on the edge of whatever margin of safety exists.

He wants to stall, but he knows

that his delay will only result in having someone else with less knowledge put in his place. The last test seems to indicate the reactor is ready—and there are all the usual fail-safe devices. It should come as no surprise that some tests are unreliable and that a vital, small part wasn't properly inspected. The result is a melt-down, with all that implies.

And with a good deal more that isn't implied, as we find out. Scortia and Robinson have rigged things, but in general they have contrived only what is needed to minimize the results, at least in the immediate disaster. There's a foreword where they explain how they set up the weather, and I find their premise acceptable. To find just what the implications of a "minimized" disaster may be, read the book. I found it scientifically believable—and also convincing in the human decisions as to what had to be done after the disaster occurred.

There are also a number of human-interest sub-plots, many of them good, and with characters I could understand. But the real story is that of the disaster itself.

It's borderline science fiction, though the future developments are good; but it's too good a story to miss, however you want to categorize it.

The Bladerunner, by Alan E. Nourse (Ballantine, 213 pp., $1.50), is a medical story, which is quite proper, since Nourse is a Doctor of Medicine. But the future of medicine it shows is far different from what is usually depicted. I suspect that the idea would never have occurred to anyone who did not have medical training.

It's foreshadowed in the present, where the percentage of older people keeps increasing, adding to the burden of medical care; and where medical costs are running upwards on something of an asymptotic curve. Nourse suggests that it was approaching a point where it would bankrupt the government (along with other trends) when a researcher proved that the end of the system was only a few years away. Various suggestions were made to control things, but only one seemed to offer a possible, if drastic solution. That, also, would solve the runaway population growth and the fact that with increasing care for everyone, genes that might lead to early death—and hence eliminate themselves—were being saved to spread through all the population. Soon, in fact, there would be nobody left with sound germ plasm, and the whole race would go to pot.

The solution was seemingly simple. Let the hospitals treat anyone who came in for anything—but demand that that person accept sterilization along with the treatment. (There is a grace period during the first five years of childhood.) Obviously, the people with weaknesses will either die outside the hospital—or be sterilized in the hospital, and no longer proliferate. And under the threat of total disaster without that solution, the necessary laws were passed.

So now we have bootleg medicine, of course. Doc in the novel is

a man of traditional belief, who cannot see humanity suffer, even if they won't consent to be sterilized. The title comes from the fact that he has as his assistant a bladerunner—one who deals in the black market to get the supplies and equipment needed.

Then Doc discovers that a seemingly mild "influenza" virus is really deadly after a period of incubation. It's a wild plague that may well kill off more than even the legendary Black Plague killed! It's already working on a large number of people, and only the medical establishment can hope to control it; but the afflicted people—who still think it's a mild case of flu—are not going to go to that medical establishment where they know they will be sterilized.

It makes a good story. All the characters are well drawn and believable, and there's a good deal of warmth as well as tension to the story. Some of the details are developed far better than usual. There are some evidences of rather simple development, probably because the story was originally meant as one of Nourse's "juvenile" novels. There's nothing juvenile about the characters, however—nor about the way the situation is handled. And there are no saintly doctors and evil administrators—just people who are facing trouble against a background that is a lot more complicated than it seems at first.

A good story with some thought-provoking ideas.

The Early Williamson, by Jack Williamson (Doubleday, 199 pp., $5.95). Now who could be more of an expert on the life and writing of Jack Williamson than Jack Williamson himself? Here we have an example of total experience!

This is a pleasant, somewhat revealing account of Williamson's background and the first five years of his writing career, from 1928 to 1933. It includes eleven pieces by him, all fairly short.

My only complaint with the book is that it is much too short, covering too few years. Asimov's *Early Asimov* ran to well over 200,000 words and covered his development into a full-time writer, with some 27 stories as examples. My own book in the series was about the same size and covered thirteen years, including two dozen sample stories. I had hoped that Doubleday's *Early* series would continue in the same format. And I particularly looked forward to Williamson's book. After all, he is one of the very few science fiction writers who began almost at the beginning of the magazines and has continued to the present. (Offhand, Edmond Hamilton is the only other one I can remember.) He could tell us of the days that preceded the advent of John W. Campbell, when writers had to work for $200 a novel—and then wait forever to collect that. And he could indicate more about the evolution he saw in the nature of the stories than any other writer scheduled to be published.

Unfortunately, however, I gather that the big books were not capable of being priced high enough

to justify doing them. A pity!

Still, I'm delighted to have even this much. Asimov and I did much of our developing in the bigger cities (though I grew up on a farm). Williamson was born and remained mostly in a thinly populated rural area. His contact with editors was solely by mail, while ours was often in person. It is a difference that simply underlines many other differences between Williamson and most of the other writers I know.

The stories are surprisingly readable. None are great, but most have touches that make them worth including. Looking over them, it's easy to see that Williamson was one of the first in the field to concentrate on the human values of a story, rather than the gadgets.

Despite my wish for more, I'm glad to have the book and I enjoyed it.

The Witling, by Vernor Vinge (DAW Books, 175 pp., $1.25) is a story that depends on a map—which is printed where it can be best used—for full understanding. That map is a polar projection, for reasons that become obvious. And the solution lies in the map and the mathematical understanding behind it.

But don't worry! Vernor Vinge is a mathematician, and he has enough understanding of what he's about to make it clear. It's a lovely solution, too. So far as I know, it's one of those rare fresh ideas.

Basically, the story takes place on a world where the people are somewhat primitive. They don't need a high technology, because they are capable of teleporting things to any place where there is a convenient body of water. Vinge has worked out the whole business of teleportation very sanely, even to the problem of where the energy required comes from. (It doesn't—no energy is needed in the system he uses.) But there are difficulties, nevertheless. Momentum is conserved. And hence, you can't simply teleport yourself from the equator to the pole, nor to the side of the planet turning toward the Sun from a place turning away from the Sun.

Onto this planet come two Witlings—people who have no ability to teleport or use the other necessary powers. They're from a technical society. When their technology breaks down, they are stranded—together with a local ruler who also is a defective Witling—on a planet where there's so much heavy metal in the soil and food that they'll shortly die of those poisons.

They have to get back to a base that is far around the world from where they are, in order to send a call for help to their home planet. But politics in that society are the same as everywhere; and the routes that should be open for teleportation (provided by a native, of course) are closed to them.

I wish Vinge had shown the actual landing of the strangely-powered craft his hero used. It's covered in the last chapter, however, so nothing is left out.

It's a fine adventure story with a lot of careful thought and knowledge behind it. I recommend it. ■

GRANT TITLES FROM HISTORY

JOHN H. DOUGLAS

■ With all the current fuss over grants given by government agencies for "silly" research, it might be interesting to consider how well some of the great discoveries of history would have fared if they had been subjected to Congressional scrutiny. We thus present some likely titles for grant proposals by historical figures (whose name appear at the end, together with their discoveries) and the probable comments of a practical-minded legislative aide, recommending why his Congressman should vote against them.

[1] "Perturbation of space and time at extreme velocities, with implications for mass-energy relationships." (Pure science fiction. A patent office clerk proposes to prove by pure mathematics that clocks would run slower and measuring sticks would get shorter if they could be accelerated to nearly the speed of light. Topic is irrelevant to everyday life, such effects cannot be experimentally tested in the conceivable future, and the whole business violates three centuries of amply demonstrated physical principles.)

[2] "Possible interrelationships of various species of Galapagos finches." (Young drifter wants to take a five-year junket around the world, toward no particular end. His academic qualifications are limited to having flunked medicine at Edinburgh and divinity studies at Cambridge. He enjoys the sporting life and now says he wants to collect rare birds and such.)

[3] *"Er redete mit dem Vieh, den Vögeln und den Fischen"*—(roughly translated): "Conversing with dumb animals." (Austrian physician and goose fancier wishes to further his studies in communicating with lower animals—he sometimes becomes their "parent" and, for example, jumps into the water with his adopted geese to help them learn to forage.)

[4] "Transmission of pod color in crossed strains of garden peas." (Young Augustinian monk, having flunked out of the university and failed to qualify as a teacher in his Order, now raises peas in the monastery garden. Intends to note pod color and plant height over several generations—cannot produce any publishable results for at least eight years.)

[5] "Molecular stimulation by electromagnetic waves in a resonator with positive feedback—for application to high-resolution microwave spectroscopy studies of quantized molecular vibration modes." (Reputable physicist with experience in radar; but the product sounds awfully esoteric, with little foreseeable practical application.)

[6] "A compendium of new mechanical devices, explanation of hydrodynamics, an improved method of bronze casting, proof of the impossibility of perpetual motion, and discourses on related and unrelated topics." (Easily ignored. This nut turns out to be an illegitimate itinerant artist with little formal schooling, who claims to intuitively understand the principles of science and technology better than those now propounding them in scholarly publications. A virtual illiterate in mathematics, he is reduced to drawing pictures to express his ideas.)

Fortunately, in most cases, the researchers in question were able to survive somehow until their work was better recognized. They were: (1) Albert Einstein, as he might have proposed his relativity theory; (2) Charles Darwin, who took his five-year journey as an unpaid naturalist and returned with the idea of evolution; (3) Konrad Lorenz, the founder of modern ethology (the study of animal behavior); (4) Gregor Mendel, whose pea experiments led to the understanding of heredity; (5) Charles Townes, as he might have described his work leading to invention of the laser; and (6) Leonardo da Vinci, who anticipated by several centuries many scientific and technological principles, but whose writings in these areas were either lost or ignored for the reasons indicated.

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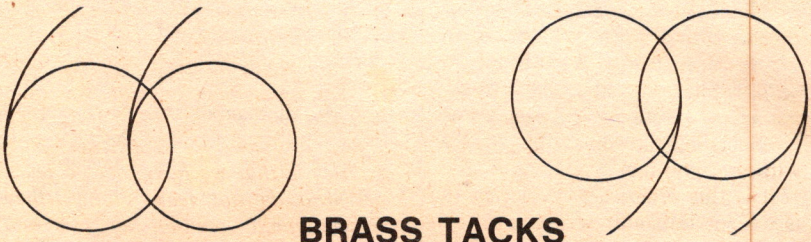

BRASS TACKS

Dear Mr. Bova:

The September 1975 issue of Analog is the best to come out in a long time. And since most have been excellent this year, September was outstanding.

The two novelettes were by two very practiced (and very *good*) writers. The short stories were excellent; they were not only pleasant reading, but they drove home points that needed to be driven home.

On to the fact article. I hope that Richard Hoagland supplies Analog with science fact far, far in the future. He has written in this issue one of the best articles I have ever read in your magazine.

However, I would like to point out a discrepancy in "Rendezvous in 1985."

Mr. Hoagland gives us detailed and fascinating accounts of what a mission to a comet would do for us, and a blow-by-blow description of how it probably will occur.

He omits the fundamentals of such a project, though. How will we get a probe "up there"? He doesn't answer this question, so I have a suggestion.

For several space missions, NASA has updated test spacecraft to flight status in case something went wrong with the actual craft during take-off. As of recently, there have been no complications during this procedure. NASA is left with spare spacecraft.

Why not use these spare spacecraft (Mariner and Pioneer, as examples) to launch cometary probes? It would cost the American public far less money to do just as good a job . . .

SCOTT SMITH
10418 Hayvenhurst Avenue
Granada Hills, California 91344

It is not so much the cost of the spacecraft. The booster can cost between five and ten times as much as the scientific payload. A Titan such as the one which launched Viking can cost as much as 45 million dollars. That's why we need a good, reusable shuttle. Getting off Earth is too expensive, even for some very desirable objectives.

Dear Ben:

I must agree with Richard Govea, whose letter appeared in the October 1975 issue, on one point. Mr. Nixon did nothing more than exploit the fact that America today is divided into pressure groups whose aims often conflict with one another.

It is this *division* of America that is one of the *most serious and ominous* characteristics of the social scene today. Take the current controversy over grain sales to Russia as an example. The farm states are very much in favor of it, but the longshoremen's union and the nonfarm consumer states are both very much against it. Not only this example, but consider also the recent middle-class outcries about dumping or seriously cutting back welfare. If this was carried out what would all the millions of welfare recipients do? Would they turn into an angry mob? Well maybe, maybe not, but it is clear to me that Americans are far too divided among themselves to take any decisive stance on any of the serious economic and energy problems, without enraging some group of Americans that could number many millions. It is not a pretty prospect.

JOHN S. KELLY

70-A Farmers Avenue
Bethpage, New York 11714

The US—from the outset a couple of centuries ago—has always been a pluralistic society featuring loud and raucous (and sometimes bloodily bitter) disagreements among its many social groups. Europeans have long been alternately bemused and frightened by this behavior. It is the task of a leader, however, to get the arguing factions to agree on some common goals no matter how grudging the agreement may be, and then go out and pursue those goals. A major problem of recent American politics is that we have elected leaders who do not lead; rather, they watch public opinion surveys and flounder in the data. Nixon, rather than bringing factions of the nation together, worked assiduously to keep them disparate. Divide and conquer; an old tactic of kings.

Dear Ben:

I was pleased to see your note of our naming a crater after John W. Campbell, Jr. I think it is a very appropriate choice as well as something that Campbell himself would have appreciated. However, one typographical error: the region is just north of Mare Chronium, not Mare Chromium. The latter is on the Earth and is called Detroit.

On the two recent articles by Hoagland and by Buckley, let me say that, in my view, there is no evidence which forces us to think that Mars is or is not inhabited now, or in the past. This is not an issue which can be decided by pure and abstract reason. Experiments are needed: fortunately, there seems now to be a significant chance that Viking will work and make the first approach to an experimental answer to the question.

With best wishes,

CARL SAGAN

The only problem with laurels such

as this is that the recipient never gets to enjoy the honor. But we all appreciate it!

Dear Ben,

I hate to annoy you with trivialities, but I enjoyed "The Cerebrated Jumping Frog" (November 1975 issue) so much, that I can't resist pointing out two errors of no import.

The Turks invaded Cyprus, not Cypress (see p. 140). Cyprus is an island, Cypress is a tree.

The Italian scientist who first made dead frogs' legs jump by means of an electric charge was not Alessandro Volta but Luigi Galvani (see p. 147). Volta was involved in the controversy on the matter, however, so it's a very near miss.

This letter is not to be construed, however, as granting readers permission to point out errors in my stories. (They don't need permission, darn it.)

ISAAC ASIMOV

You've never heard of the Turkish invasion of Cypress, California (pop: 31,026)?

Dear Ben:

With your permission, a quick bow shot at Andrejs Baidins ("Brass Tacks," November 1975) for his ". . . you have shot down ideas without producing new ones. Progress comes from finding ideas that work; shooting a million ideas full of holes will not produce progress."

Hitler had a pseudoscientific idea that was even madder than Velikovsky's. It may have been an "unpardonable sin against progress" to try to keep him from imposing it on the rest of the world, especially since a million-and-a-half German soldiers had to be shot full of rather lethal holes in the process. Certainly the final Allied victory couldn't be labeled "progress" in Mr. Baidins' terms—we all ended up with the same bumbling domestic systems that we started out with.

But, unhappily, there are times when so much damage is being done that you can't wait around for a better idea to materialize. If what you have, flawed as it is, seems better than the "positive" proposals of the Hitlers and the Velikovskys, a "negative, critical" reaction is sometimes necessary.

THEODORE R. COGSWELL

As Socrates discovered, intellectual progress takes place when ideas and assumptions are treated skeptically and argued over. Socrates also discovered that those who want to believe blindly in their ideas and assumptions can treat skeptics to hemlock cocktails.

Dear Sir:

The final passage of your Guest Editorial on "what about the anthropologists?" gave the real answer, and pointed out your ill choice of words. You wrote that anthropologists "have the power" to do certain things. What they specifically do *not* have is power. All they have is the ability . . .

As I noted in a paper written about the time Sue Ellen Jacobs was making her first brilliant im-

pression on the profession with her medical anthropology: "Clients ourselves, we study client peoples."

As the peoples have been throwing off their clientage status, they have also been freeing anthropologists, but for many of us the time is late and we are laggard: What we really need is to turn and study those who are the sources of our patronage . . .

The really big problems facing us are our destruction of the environment—both natural and cultural—in which we must live; the problems of revolution and counterrevolution which sometimes seem to, but never do, alleviate overpopulation; the questions of war, from raids to encounters to conquest and resistance to conquest; the question of policing as a form of public service and policing as a form of conquest, and resistance to the latter; the problem of educating members of governments and of pressure groups in what we already know, and in what we are finding out. We have not solved these, but we have some good anthropologists working on them.

But the point still is that we do have abilities, but very little power; in fact, those very symptoms of which Drs. Ballonoff and Jacobs wrote are symptoms of powerlessness.

Oh, and it shouldn't take an anthropologist to tell anyone but John Campbell that hydrogen in observable quantities, for Earthlings, is definitely a cultural artifact. Furthermore, anthropological archeologists, lacking other powers, move "impossible" stones as they originally were moved—with local work gangs!

CLIFTON AMSBURY
768 Amador Street
Richmond, California 94805

If anthropologists have the ability to improve our understanding of various societies, including our own, it is because they have knowledge. Knowledge is power. If the knowledgeable do not use the power they have, they shirk their responsibility.

As for the nonobservability of hydrogen, think about it the next time you take a drink of water.

My dear Mr. Bova:

Roger Zelazny's story "Home Is the Hangman" in the November 1975 issue of Analog is a lovely tale, but I miss one element (after two readings), and am curious about its absence.

Zelazny's menace (antagonist, protagonist, or what have you) is named for the first time in column 2, page 19 as the Hangman. That name justifies the title . . . and provides the aspect of menace needed within the story. However, I didn't find anything within the story that explained the assignment of that name to the android.

Who goofed? Zelazny in writing and omitting that little fact . . . or you or yours . . .

L. O. WEINGART
333 East 69th Street
New York, New York 10021

Roger Zelazny answers:

Mea culpa. How about—Human Analog Nuclear Generator Mobile Analysis Nexus? ■

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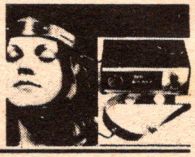

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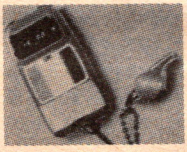

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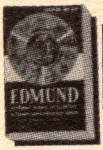

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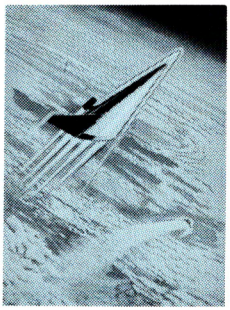

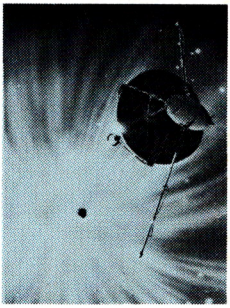

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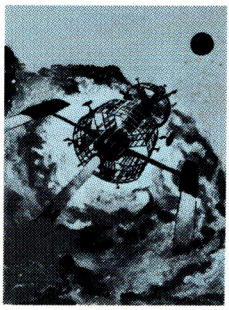

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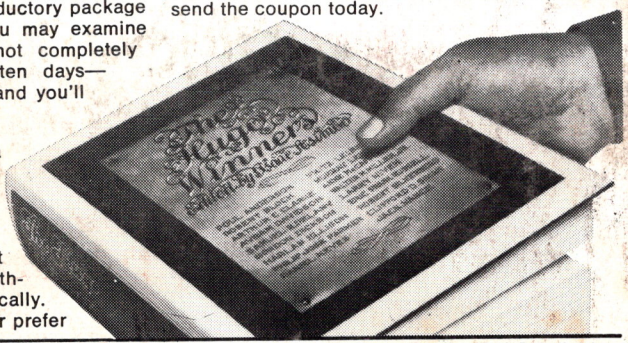

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